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The construction of an instruction manual in carry-over value athletics.

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THE CONSTRUCTION of an INSTRUCTION MANUAL IN
CARRY-OVER VALUE ATHLETICS

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THE CONSTRUCTION OF AN INSTRUCTION MANUAL IN
CARRY-OVER VALUE ATHLETICS

by
LEO J. SANTUCCI

PROBLEM SUBMITTED AS PARTIAL FULFILLMENT FOR
THE DEGREE OF MASTER OF SCIENCE
MASSACHUSETTS STATE COLLEGE
AMHERST, MASSACHUSETTS

1941

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THE CONSTRUCTION OF AN INSTRUCTION MANUAL IN
CARRY-OVER VALUE ATHLETICS

CHAPTER I

THE INTRODUCTION

CHAPTER I

THE INTRODUCTION

"Remember, the important thing is not necessarily to play well, not to win, not to be champion, but to obtain the benefits from the game. In short---to play and have fun."+

(1) The Problem Defined---The problem which this study seeks to answer is: what material should go into an instruction manual in carry-over value athletics?

This manual is to be made suitable for the one-hour required Physical Education Program at Massachusetts State College.

(2) The Purpose of the Problem---The purpose of this study is to make an instruction manual that will satisfy the purpose of the one hour required course in Physical Education at Massachusetts State College, namely-----to present a wide variety of activities of carry-over value for recreation during middle life. These include such activities as archery, badminton, golf, tennis, swimming, volleyball, softball, touch football, fishing, canoeing, and skiing.

+Tunis, J. R. Sport For The Fun Of It A. S. Barnes & Company. New York, 1940. Foreword VI.

(3) The Reasons the Problem Was Chosen--This problem was chosen by the author for three reasons:

(a) it will be of value to the student when he reaches the age when he may make use of these activities, (b) it will be of value to the Massachusetts State College Department of Physical Education in connection with the teaching and administering of these carry-over value activities, and (c) it will be of value to me as a future physical education instructor in that I shall have a ready-made manual for reference in my work.

(4) The Scope of the Study---This study is intended to cover that material essential to a student and an instructor in carrying out the carry-over value program at Massachusetts State College. This includes the history, skills and techniques, illustrations, equipment, condensed rules, and terminology of each individual activity covered in the program.

(5) The Procedure---The procedure followed in this study was to collect information from materials and subjects and to follow a definite plan of action in writing it up.

(a) Materials Used--The materials used in this study were questionnaires given to the 1938 and 1939 freshman classes at Massachusetts State

College, facts and information collected by the Department of Physical Education, and facts and information collected from various books by the author.

(b) Subjects Used--the subjects used in this study were freshmen attending Massachusetts State College, and authors writing books dealing with carry-over value athletics.

(c) Plan of Action--After due deliberation and consultation with the Physical Education Department, it was decided that, in order to obtain a reliable answer stated, I should (a) survey the material in the files of the department, (b) survey material written by well-known authorities, (c) set up certain standards to follow, and (d) condense my material accordingly.

CHAPTER II

GUIDES USED IN THE SELECTION OF
MATERIAL FOR THE INSTRUCTION MANUAL

CHAPTER II

GUIDES USED IN THE SELECTION OF MATERIAL FOR THE INSTRUCTION MANUAL

"Physical Education is that phase of the whole program of Education which is concerned with big-muscle and related responses, and with the modifications of the individual resultant from these responses."+

(1) Teacher Qualifications Necessary to Administer the Required Physical Education Program at Massachusetts State College---The purpose of the one-hour required Physical Education Program at Massachusetts State College is to expose the individual to a wide variety of activities which have a carry-over value, rather than to make him skilled at any one sport. It becomes unnecessary for the teacher to know intensively and extensively about each activity. However, he must know certain basic material.

(a) Information Necessary--The information that a teacher must have on hand is only that which gives a clear, concise word-picture of the activity which is being taught.

(b) Reference Material Necessary--Every game has its enthusiasts and for that reason, if

+Nixon and Cozens An Introduction to Physical Education
W. B. Saunders Company. Philadelphia. London. 1938.
Page 23.

for no other, an instructor must have in his acquaintance reference material to which he can direct the person who wants to learn more about the activity being taught.

(c) Need for a Manual--If many sports are to be covered in the program and each has its enthusiasts, it can be seen that the cost of a good reference library would be great. Therefore, it becomes necessary to secure a good instruction manual which can be used by both the student and the instructor. This, of course, involves careful selection of material so it becomes necessary to set up certain standards as guides in the construction process.

(2) Standards Required in a Good Instruction Manual----

This manual, being constructed only to meet the needs of the one-hour required course in carry-over value athletics at the Massachusetts State College Department of Physical Education, naturally must be drawn up with the express purpose of following the guides as set forth by the department.

(a) Restricted to the Present Program in

Operation---The present program of the one-

hour required Physical Education Program includes a spattering of Archery, Badminton, Golf, Tennis, Skiing, Swimming, Fishing, Softball, Touch Football, Canoeing, and Volleyball. Because of the fact that it would be practically impossible to include all carry-over value sports in a short concise manual, it was decided to restrict the study to only those now in use in the program.

(b) In Agreement with Outline as Approved by the Department--The Department of Physical Education felt that any manual that was to be used by them should have their approval. Therefore, an outline was submitted by them and followed by the author is writing up the manual.

(c) In Agreement with Authorities---- Naturally any book or manual that is to be constructed by a novice should include only material from authoritative sources. These authorities are well-known men in their field and therefore good judges as to facts and information.

(d) Valuable to the Student, Department, and Author---Whenever a piece of work is undertaken, it must have some value. In this case,

the instruction manual should be valuable to the student for future life, to the department for future classes, and to the author for future reference.

(e) Must Be Comprehensive---All writers agree on the fact that any information to be passed on to young people must be clear, concise, simple, and understanding. Also, it must be clearly illustrated and demonstrated.

(f) Must Follow an Order of Importance----
An instruction manual that is to be used in conjunction with a particular program should follow the order of importance of activities as laid down in that program. It would be foolish to jumble the activities. Therefore it becomes necessary to follow the plan as set forth.

CHAPTER III

DEFENSE OF THE AUTHOR'S CHOICE OF MATERIAL

CHAPTER III

DEFENSE OF THE AUTHOR'S CHOICE OF MATERIAL

"The value of such activities lies almost wholly in the enjoyment and development they afford the participant, and for that purpose an average amount of skill and knowledge will suffice."+

(1) General Statement--Whenever a person sets up guides for his work, he must be able to prove that his work follows these guides; otherwise his work becomes valueless. Therefore I shall show why this manual is the best suited for the list of guides proposed.

(2) Does It Fit the Present Program?--By referring to Chart #1, which shows the sports covered in the present program and comparing it with the sports covered in the appendix, it becomes obvious that they both cover the same activities, namely-----archery, badminton, golf, tennis, swimming, canoeing, skiing, softball, touch football, volleyball, and fishing.

(3) Is It In Agreement with the Department Outline?--The department outline as presented to the author (Chart #2) calls for the writing up of each sport as to history, skills and techniques, illustrations, equipment, condensed rules, and terminology. By referring to the appendix, it can be seen that that is the way in which each sport has been handled.

+Mitchell, Elmer D. Sports for Recreation A. S. Barnes & Company. New York. Preface IV.

CHART #1

THE ACTIVITIES COVERED IN THE PRESENT PHYSICAL
EDUCATION ONE-HOUR REQUIRED PROGRAM AT MASSA-
CHUSETTS STATE COLLEGE AS COMPARED WITH THE
ACTIVITIES COVERED IN THE MANUAL

Activities in Present Program	Activities in Appendix
Touch Football	Touch Football
Archery	Archery
Badminton	Badminton
Skating	Skating
Volleyball	Volleyball
Swimming	Swimming
Canoeing	Canoeing
Fishing	Fishing
Softball	Softball
Golf	Golf
Tennis	Tennis

CHART #2

THE OUTLINE TO BE FOLLOWED IN WRITING UP THE MANUAL--
AS PRESENTED BY THE PHYSICAL EDUCATION DEPARTMENT

Contents of Each Sport

1. History---A brief summary.
 2. Skills and Techniques---Only the fundamental ones.
 3. Illustrations---Only those necessary.
 4. Equipment---Kinds and prices.
 5. Condensed Rules---A summary of the most important.
 6. Terminology---Those terms necessary to understand the sport.
-

(4) Is It in Agreement with Authorities?--The author believes that the bibliography of the problem readily answers the preceding question. It shows that the material was condensed from the material written by the best men in the field of Physical Education. Naturally, being a condensation of authoritative material, it must be in agreement with that material.

(5) Is It Valuable to the Student, to the Department, to the Author?--Chart #3, which is the result of a questionnaire taken by the freshman classes of 1938

and 1939 at Massachusetts State College, shows conclusively that the students believed the sports were beneficial. If they were beneficial when given only by the lecture method, it is safe to conclude that an instruction manual will make them more so.

CHART #3

THE RESULTS OF A QUESTIONNAIRE GIVEN TO THE FRESHMAN
CLASSES IN PHYSICAL EDUCATION AT MASSACHUSETTS STATE
COLLEGE IN 1938 AND 1939

Class		Was the Pro- gram of Value?		Class	
Activities				Activities	
1938	Badminton	Yes	No	1939	Skiing
	Tennis	91%	9%		Golf
	Archery				Tennis
	Golf				Badminton
	Softball				Archery
	Canoeing				Touch Football
	Fishing				Fishing
	Swimming				Softball
	Volleyball				Swimming
	Skiing				Canoeing
	Touch Football				Volleyball

Was the program
of value?

Yes	No
93%	7%

The manual will be valuable to the department and to the author, for if such were not the case, the author would never have undertaken to construct the manual.

(6) Is It Comprehensible?--The careful reading of the appendix will show that the manual is clear, concise, simple, and understandable. It is assumed that it must be so if it is a condensation of authoritative material.

(7) Does It Follow the "Order of Importance" as Laid Down by the Department?--In any program where certain activities are taken up in a definite order, it is essential that the manual on these activities follow the same order. Chart #4 compares the order of activities in the present program and the order of activities in the appendix, showing definitely that the manual follows the prescribed order.

CHART #4

"ORDER OF IMPORTANCE" OF ACTIVITIES IN THE PRESENT
PROGRAM OF PHYSICAL EDUCATION AT MASSACHUSETTS STATE
COLLEGE AS COMPARED WITH THE ORDER IN THE MANUAL

Department Order	Manual Order
1. Touch Football	Touch Football
2. Archery	Archery
3. Badminton	Badminton
4. Skiing	Skiing
5. Volleyball	Volleyball
6. Swimming	Swimming
7. Canoeing	Canoeing
8. Fishing	Fishing
9. Softball	Softball
10. Golf	Golf
11. Tennis	Tennis

APPENDIX

TOUCH FOOTBALL

TOUCH FOOTBALL

History

The history of touch football can be said to have started at the inception of football in the United States. This was in the year 1869, when the first college game was played between Princeton and Rutgers University. In that game there were twenty-five players on each side. In other words, boys and young men immediately copied or imitated the game in one form or another, adding or taking away from it whatever their peculiar needs demanded. Most of us have seen groups of boys playing football on some corner lot, using a cap in the absence of a football. This, of course, eliminated the kicking part of the game. On other occasions we have seen older men playing with young boys, all of them having great fun regardless of the discrepancy in age, weight, and size. This annulled tackling. So it is obvious that changes were necessary, and these changes were made. In this manner football has contributed to what is now called "touch football".

The new game of touch football has not detracted in any way from the regulation game of football. In fact, it has added impetus to the nation's great fall sport, and has been the means of making the whole country football-minded, for practically every youngster plays football in this form.

Skills and Techniques

Touch football consists of two main weapons, offensive play and defensive play, each in itself very important. Together they form the basis of a good touch football team.

Offensive Play--The skills needed in the correct carrying out of an offence are blocking, charging, running with the ball, passing the ball, catching the ball, and signals.

1. Blocking: This consists of removing an opponent from the path of the ball carrier by obstructing him without making contact. Good blocking depends on speed, courage, and the ability to get out of the way before contact is made.
2. Charging: It is very important that players charge quickly. It is the player who gets the start that more than likely wins the decision. Remember, "get the jump" on your opponent.
3. Running with the Ball: Practically every player has to run with the ball. A good start, made by taking short, quick steps is essential. Run with knees high and feet apart. Learn to sidestep, pivot, cut back, reverse, change pace, and swing the hips. Carry the ball in the throwing arm so that a pass can be made at any time.
4. Passing the Ball: The ball can be either gripped or laid on the open hand. In starting the pass, the ball should be held shoulder high, cocked back behind the ear, and thrown so that the flight starts on a line parallel to the shoulder and passing through the ear. For short passes, two hand "lobs" or "floats" may be used.
5. Catching the Ball: A pass is no good unless it is caught. In catching a ball, use only the hands and finger tips. Do not let the ball hit the body.
6. Kicking the Ball: In kicking the ball the feet should be slightly spread, the right foot or kicking foot about twelve inches to the rear. Catch the ball in the hands about midway between the shoulders and the waist. As the catch is made, step up with the right

foot slightly in front of the left foot. Take a natural step with the left foot. Hold the ball at waist height and as the right leg starts its swing, the right hand guides the ball to the foot. The leg swing starts with the knee bent, but just as it strikes the ball the knee is locked, and the whole leg is rigid. The kick should be followed through. The ball should be kicked off the arch of the foot.

Defensive Play--In playing the defense the following points are important:

1. Watch the ball, charge quickly, and "touch" the ball carrier. Be alert for passes and fumbles.
2. Use your hands to push your opponents away.
3. All players should cover their own territory.
4. Perfect a good pass defense, using either man-to-man or zone.
5. Rush the passers at all times.

Equipment

Equipment is not very important in touch football, but the following items are necessary essentials.

Field: Any open piece of land that is about 60 yards long.

Ball: Any football or substitute.

Clothing: Any old clothes are all right, but it is suggested that they be loose and comfortable. A sweat shirt and pair of slacks will do.

Footwear: Sneakers are preferable but any old shoes may be used.

Condensed Rules

In touch football the following rules are used:

1. The field shall be 60 yards of a regulation football field and it shall be divided into three 20 yard zones.
2. The offensive team shall have four downs to advance the ball from one zone to another.
3. No spikes or cleats are to be worn.
4. The ball shall be put in play from the goal line by either a pass or kick and shall become dead as soon as the player receiving the ball is touched.
5. The ball becomes dead at any spot anytime that it touches the ground.
6. Tackling and holding are barred. Penalty for the team in possession is loss of ball; for team not in possession of ball opponents allowed free down.
7. There is to be a 5 yard restraining line on the defensive team.
8. A pass can be made at anytime to any one and in any direction.
9. One play after touchdown from the 5 yard line shall be allowed the scoring team for the extra point.
10. Kicking is not permitted except on announcement of kick formation. The scrimmage line must not be crossed by either team until the ball is punted.
11. The ball is dead when the player in possession of the ball is tagged by an opponent.
12. Players are allowed to pass over the goal line counting it a down rather than giving the ball to the other side as a touchdown.

For complete rules for Touch Football at Massachusetts State College write:

Physical Education Department
Massachusetts State College
Amherst, Massachusetts

Terminology

Ball--The football used in playing.

Dead ball--A player is downed or the ball touches the ground.

Fumbled ball - A ball muffed by a player.

Forfeit--The awarding of the game to a team because of disqualifications of the opponents.

Field goal--The scoring of 3 points from the field.

Periods--Length of time designated for each part of the game.

Time-out--The suspension of play for two minutes.

Touchdown--The scoring of six points.

Safety--The scoring of two points.

Tackling, pushing, blocking--The illegal use of hands and body against an opponent.

Referee--The person in charge of the game.

ARCHERY

ARCHERY

History

The origin of archery is lost in antiquity. It is one of the oldest of human sports, yet one of the most popular of its type in modern times. In certain periods of civilized history, archery was the most popular and widely practiced of all sports.

Archery had its inception, not as a sport but as a method of self-preservation, the bow and arrow being used in primitive cultures as implements of warfare and as a means of providing food and clothing. It is a characteristic of primitive peoples that, in times of peace and plenty, they utilize in sport the implements and skills of warfare and hunting. Thus, even when the bow and arrow was a means of protection, archery was much practiced as a sport. An illustration is seen in the customs of the various tribes of American Indians, among whom the bow was the chief weapon of fighting and hunting, yet was widely used in contests and games, particularly by the young.

It would be difficult to determine which early folk was first to use the bow and arrow. The evidence seems to indicate that it was used simultaneously by many different cultures in various parts of the world--the Egyptians, Babylonians, Greeks, American Indians, and many others.

In civilized history, as in the primitive cultures, archery was early encouraged as a sport. In fact, in some countries it was not only encouraged, but some people were compelled by their rulers to learn to shoot. This was particularly true in England, and during the last half of the sixteenth century the sport had gained a widespread following in that country among the rank and file of the citizens. The credit for this great impetus largely goes to Roger Ascham, a skillful archer, who, beginning in 1545, did much to popularize the sport with the result that many archery societies sprang into being.

It was three centuries later (1844) that the first championship meetings were held in York, and these events continued to the present time. Four years later, Horace H. Ford, the greatest archer of his time, made his appearance in the archery world. He continued from where Ascham left off and was responsible for the development of many of the scientific aspects of the sport.

Today archery is quite prominent in continental Europe, especially in Belgium and France, and is indulged in more by the common people than by the leisure class.

In the United States, archery as an organized sport had its beginning in 1828, when the first archery society, the United Bowmen of Philadelphia, was founded through the efforts of Titan R. Peale, an artist. The history of archery in the United States follows very closely

that of England. Societies sprang up at the beginning of the sport only to die down and then be revived again. Just as the Napoleonic Wars had a lessening effect on the early archery societies of England, so the Civil War in America discouraged archery for almost twenty years. It was revived, however, after the Civil War, by Maurice and Will Thomson, ex-Confederate soldiers, who were in search of health and chose this method of outdoor sport to regain it.

To further the growth of archery in the United States and to insure its permanency, the National Archery Association was founded in 1879, at Crawfordsville, Indiana, by a group of representatives from various outstanding archery clubs. This was the real beginning of modern archery in the United States. Today archery is more popular than before, as is shown by the organization of many archery clubs which hold tournaments regularly throughout the year. In addition to organized archery, thousands of people over the country enjoy it as an informal sport.

Skills and Techniques

After the beginner has been shown how to string his bow, the following acts of shooting are necessary for him to become a successful archer: the standing position, gripping the bow, nocking the arrow, drawing the bow, aiming the bow and releasing the arrow.

Stringing the Bow--In stringing the bow, the following procedure should be adopted:

1. Take the bow in the right hand by the back side of the handle with the top limb uppermost.
2. Stand with the feet apart with the left foot slightly in advance of the right.
3. Place the lower nock or horn to which the string is tied, in the instep of the right foot.
4. Put the heel of the left hand on the flat side of the upper limb near the nock, with the index finger and thumb pushing the top loop of the string forward to the nock.
5. Bend the bow by pulling up with the right hand and pressing down slightly with the heel of the left hand, at the same time working the upper loop into the nock with the fingers.

The Stance--The archer addresses the target, assuming a standing position astride the shooting line, facing at right angles to the target. The toes should be turned outward about 45 degrees; the heels in line with the target and 10 to 12 inches apart; the weight equally distributed on both feet; the knees straight without stiffness; the hips drawn back slightly; the shoulders carried so as to be held directly over the heels; the chest well arched; the arms hanging loosely at the sides; and the head held erect and towards the target. The main point to remember in the stance is to be comfortable.

The Grip--The bow is grasped in the left hand so that the top of the handle is nearly level with the top limb of the bow uppermost. The grip is loose enough so that the handle will adjust itself properly in the hand when the draw begins. There should be a feeling that the hand is pushing against the bow. The bow should be held against the ball of

the thumb, passing diagonally across the hand from the heel to between the thumb and forefinger. The hand is rotated about a 45 degree angle with the wrist. As the hand is rotated, the elbow swings outward, pulling the fore-arm away from the bow string. This will prevent the bow string from whipping the wrist.

Nocking--Assume the grip on the bowhandle as just described. Hold the bow out horizontally at the side with the back of the hand up, the top limb to the front, and the bowstring turned toward the body. Grasp the arrow at the nocked end and place it across the bow just above the handle, permitting the forefinger of the left hand to form a shelf on which the arrow rests. Twirl the arrow in the fingers until the cock feather is up and slide it across the string, permitting the forefinger to pass underneath and keeping the thumb on the top of the arrow, pressing forward until the nock has cleared the string. The forefinger regrips the arrow, and, together with the thumb, pulls the nock back onto the string.

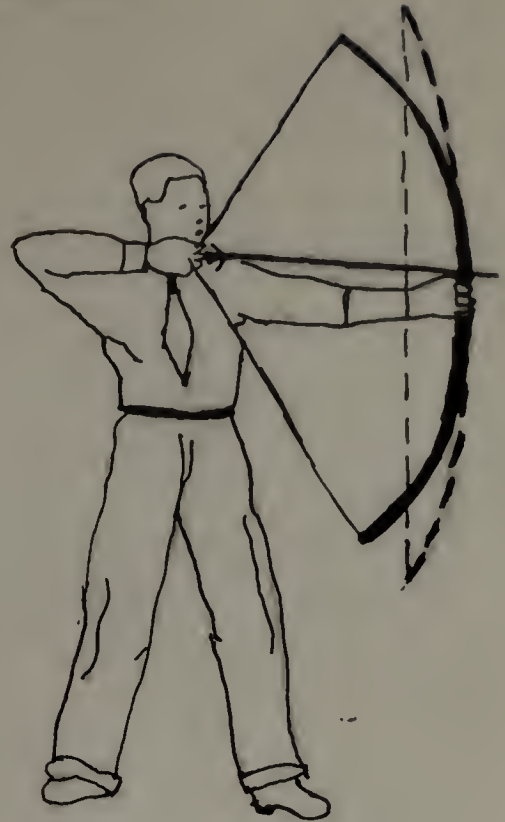
Aiming--Close the left eye, and sighting with the right eye, bring the pile of the arrow to the point of aim. The point of aim is established by aiming at some object below the target and adjusting the aim according to the result. It is a trial and error adjustment and is necessary to accomplish good shooting.

Releasing--A clean, smooth release is essential to good shooting. When the arrow is properly aimed, hold it on the point of aim and keeping the eye on that point release the arrow smoothly by simply opening the three fingers simultaneously. If this is executed properly, the right arm will jolt back of its own accord. The arm should not be pulled back purposely.

Summary of Shooting Procedure--Summarizing, the orthodox way of shooting is as follows: Stand with both feet in line and at right angles with the target, head erect, and muscles relaxed. Grasp the bow in the left hand, turn it to the horizontal position, and nock the arrow. Turn the head sharply to the left looking directly at the target. Bring the bow to a nearly vertical position by raising and extending the left arm full length horizontally, at the same time drawing the arrow back to the chin. From this position sight over the tip of the arrow to the point of aim and release the arrow, holding the shooting position until the arrow has hit the target.



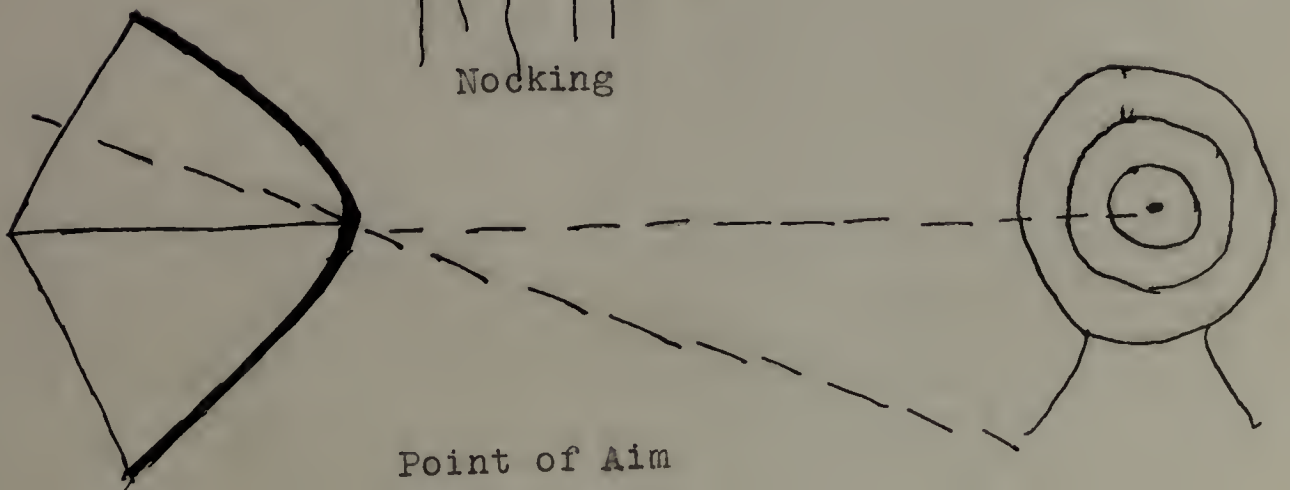
Stringing the Bow



Stance and Drawing



Nocking



Point of Aim

Equipment

In archery the following equipment is necessary and essential if one is to become a serious archer:

Bows: Wood and steel both produce good results but wood is generally favored. The three chief woods used are lemonwood, osage orange and yew. Lemonwood is the cheapest. Select a bow that is neither too strong nor too weak. A man uses a 35 to 40 pound pull.

Arrows: Wood is used, being cheaper and better than steel. The most common woods are birch, Port Oxford cedar, and Norwegian pine. The best length for a man is about 28 inches.

Targets: Of two kinds, machine and handmade. Former are cheaper but tend to become soft, permitting arrows to pass through.

Quivers: Usually made of hunting leather. For target work a wire ground quiver is best.

Finger Tab: Used to protect shooting fingers. Use leather with glossy surface such as cordovan.

Arm Guard: Protects the forearm from the string. Cordovan leather again is good.

Condensed Rules

There is only one set of rules for both amateur and professional in archery and the following are the standard rules governing target shooting:

1. A regulation four-foot circular target shall be used for all competition. The target is divided into five equal and concentric circles. The color values are: gold-9 points; red-7 points; blue-5 points; black-3 points; and white-1 point.
2. An arrow cutting two colors shall count as hitting the inner one.
3. An arrow going through or bouncing off the target shall count five, regardless of where it hit the target.
4. The target shall be placed so that the center of the gold is four feet above the ground, and over the target stake.
5. When shooting, the archers shall straddle the shooting line, which is measured from the target stake.
6. Each archer shall complete one end, after which all go to the target to score the hits. Six arrows are called an end.
7. Recording the score: Four archers shoot on one target. Number 1, the Target Captain, records the score. Number 2 draws the arrows out of the target. Number 3 checks on these procedures, and Number 4 gathers up the stray arrows. Number 2 draws the Target Captain's arrows first and then those of the other archers. The arrow closest to the center of the target is withdrawn first, and then those of the succeeding outer circles. The Captain superintends this scoring process and may give his decision, subject to the approval of the Field Captain if there is one, who settles all disputes. The Lady Paramount acts in this capacity for the women.

8. An arrow leaving the bow is considered as a shot unless the shooter can reach it from his position with the bow. However, if the bow, bowstring, or arrow, breaks while shooting, the archer may have another shot.
9. The number of hits and scores are both recorded, but championships or winners are determined only on the total score.
10. Ties are decided by awarding the championship to the one having the largest score at the longest distance, and if this fails to break the tie, the next longest distance is used.

For further information contact:

The National Archery Association
Old South Building
Boston, Massachusetts

Terminology

Anchor. The point at which the right hand is placed at full draw.

Armguard. A leather protector for the left forearm.

Arrow-plate. A piece of hard material inlaid in the bow at the point where the arrow crosses. It saves wear on the bow.

Back. The flat side of the bow, which is away from the archer when shooting.

Belly. The round or front side of the bow.

Bow-Ribbon, or Keeper. A ribbon, (string or piece of thin elastic) fastening the loop of the bow-string to the bow-horn, to keep the string straight when the bow is unbraced.

Bow-stave. The rough wood from which a bow is made.

Bow-string. The string on the bow.

Bowyer. One who makes bows.

Brace. To string a bow.

Cast. The resiliency of a bow.

Chrysal. Transverse fault in the belly of a bow. Caused by compression of the wood.

Clout-shoot. 180 yards for men, 120 for women, at a 48 foot horizontal target.

Cock-feather. The odd colored feather on an arrow. It stands perpendicular to the nock.

Crest. Coloring on an arrow near the feathers. Denotes ownership.

Draw. To pull the bow-string. The distance of the pull. The strength of the bow.

End. Six arrows shot consecutively.

Feather. The vane of the arrow. To fletch or attach the feathers to an arrow.

Field Captain. The officer in charge of a tournament.

Finger-tip (or stall). Leather protectors for the three shooting fingers of the right hand.

Fistmele. Approximately six inches. The distance between the bow-string and the bow when the bow is braced. Used as a rough measure to determine the proper length of this distance. The distance is determined by placing the hand on the handle of the bow and extending the thumb.

Five Points. Mentioned by Roger Ascham who wrote the first book on archery "Toxiphilus. 1545." Should be known to every archer.

Fletch. One who makes arrows.

Flight Shot. A shot for distance.

Follow the String. To take a permanent set which remains after being unbraced. Refers to a bow.

Foot. A hard-wood section spliced to the anterior end of an arrow.

Footed arrow. One with a footing.

Gold. The center ring of the target. A hit in the center ring.

Green. A miss. A shot which hits the ground. The ground itself.

Handle. The part of the bow grasped by the hand.

Hen Feathers. The two feathers on an arrow which are placed at 60 degrees from the plane of the nock.

Lady Paramount. A lady appointed to have the duties of the Captain of the Green for the women.

Nock. The slot at the end of an arrow designed to take the string. The groove at the end of the bow. To take the bow-string. To place an arrow on the string.

Nocking-point. The point on the string at which the arrow should be placed.

Over-bowed. Using too strong a bow.

Petticoat. That part of the target-face which is outside of the white ring. A shot that hits the petticoat.

Pile. The point of an arrow.

Pinch. To press upon the arrow with the fingers while in the act of drawing, holding, and aiming.

Point blank. The distance at which the gold is the point of aim.

Point of aim. An object used as an arbitrary aiming point. When the pile of the arrow is brought into the line of vision between this object and the eye, the arrow is correctly aimed to hit the gold.

Range-finder. A device used in locating the point of aim.

Round. An established number of arrows shot at prescribed distances.

Shooting-tab. A protector for the shooting fingers.

Tackle. Archery equipment.

Weight. Amount of pull expressed in pounds, necessary to hold the bow at full draw.

BADMINTON

BADMINTON

History

The game originated many years ago in India and was first called "poona", probably after the city by that name in Bombay, India. British army officers, located in India, were impressed with this fascinating sport and some sixty or seventy years ago introduced it in their native land.

The first "poona" club was established in 1873 at Bath, England. Since the headquarters of the Duke of Beaufort were in Badminton, a village in Gloucestershire, it was decided to call the game "badminton". This club made a number of changes in the rules of the original "poona", and the badminton rules were finally standardized by the National Badminton Association, which was organized in 1895.

The sport rapidly gained popularity in the British Isles and found its way to other countries. It was soon introduced into Canada, and from there it spread to the United States. The first badminton club in the United States was organized in New York, and Boston followed with the University Badminton Club.

In addition to the changes in name and rules that have taken place, there has been considerable evolution in the equipment used. Instead of using shuttlecocks made with a woolen ball, to which a number of feathers

were fastened, we now have a much livelier and more accurate shuttlecock known as a "bird". Instead of the old fashioned and cumbersome wooden bats, we now have well-balanced, polished ash racquets, tightly strung with lamb gut or silk.

While the fundamentals of the game are practically the same, the modern equipment has made badminton a game that demands finesse, endurance, speed, timing, and accuracy. A few trial swings, a few lobs, followed by some smashes, soon convinces one that the game is a deceptive one and one that demands every effort of a trained athlete.

Skills and Techniques

Beginners may learn much by observing good players in action. However, to become an expert in badminton one must continually practice and study the various techniques of the game.

The Grip--It is essential that the racquet be properly held so that the grip need not be changed for any stroke.....forehand, backhand, flip, drop, or smash shots. While there are several grips, the best known one is the "chopper" grip, so called because it is the way one holds the handle of an axe while chopping. The racquet should be held so that the upper outside edge follows a line which extends to a point between the finger and the thumb. It should not be tightly gripped but held firmly enough for control.

The important thing to remember in the grip is to keep the same grip for all shots.

The Strokes--The badminton stroke is a wrist flick. This is especially true of drop shots close to the net that must be flipped upward from near the floor. The wrist action is also useful in long, deep shots that are just barely reached. The overhand tennis shot is sometimes used after a "set-up" which one "kills" by hitting hard and fast at some opening.

The strokes in badminton are not very numerous but the variations in placement of these shots are almost innumerable. The following are the more important strokes and their uses:

1. The Drive: The drive should be struck about net high, either forehand or backhand, and should be sent directly at the opponent if he is playing up close to the net, or down the side-line to the back court. This shot requires much force, being hit hard with a forearm and wrist movement.
2. The Drop Shot: This is a shot that demands finesse. The bird should be stroked so as to drop just over the top of the net. This shot is made with forehand or backhand and may be started from an overhead or a real low underhand position. The shot is used

to maneuver the opponent and bird into a position for a scoring shot.

3. The Lob: This stroke should be made high enough so the opponent cannot reach the bird as it passes to the backcourt. This shot is played from any position on the court and is used primarily to draw an opponent out of position.
4. The Flip Shot: This is a shot that may be varied with the long volley from the back court to catch the opponent out of position. It should be struck fairly high in the air and flipped downward just over the net. It is used as a scoring shot.
5. The Smash Shot: This is also know as the "kill" and is very important because it is the chief scoring weapon. The bird should hit, with a fully extended arm and racquet, at the highest point possible. The bird should be contacted in front of or directly over the right shoulder, being directed downward over the top of the net with the arm, wrist snap, and body follow through.

The important items to remember in using the strokes are: (1) do not try too many "kills"; (2) play your opponent until you have a scoring chance; and (3) do not try to put "English" on the bird.

Footwork--Footwork plays a very important part in all shots and when waiting for a service or return, one should be pretty well up on the toes, not off balance, and ready to move quickly in any direction. When making a forehand shot the left foot is usually a little in advance of the right foot and during the execution of the shot the weight is shifted from the right foot to the left foot. The footwork for the backhand stroke is very similar except the right foot is forward and as the stroke is completed the weight is transferred from the left foot to the right foot.

The Service--There are a number of variations in the service but one should develop a technique of starting all of them the same way. A slow back swing, followed by a quick, snappy long service or a short, soft shot is deceptive.

Occasionally one should feint a hard service and follow with an easy one. The corners of the receiver's court are the vulnerable spots. The following services are those most used:

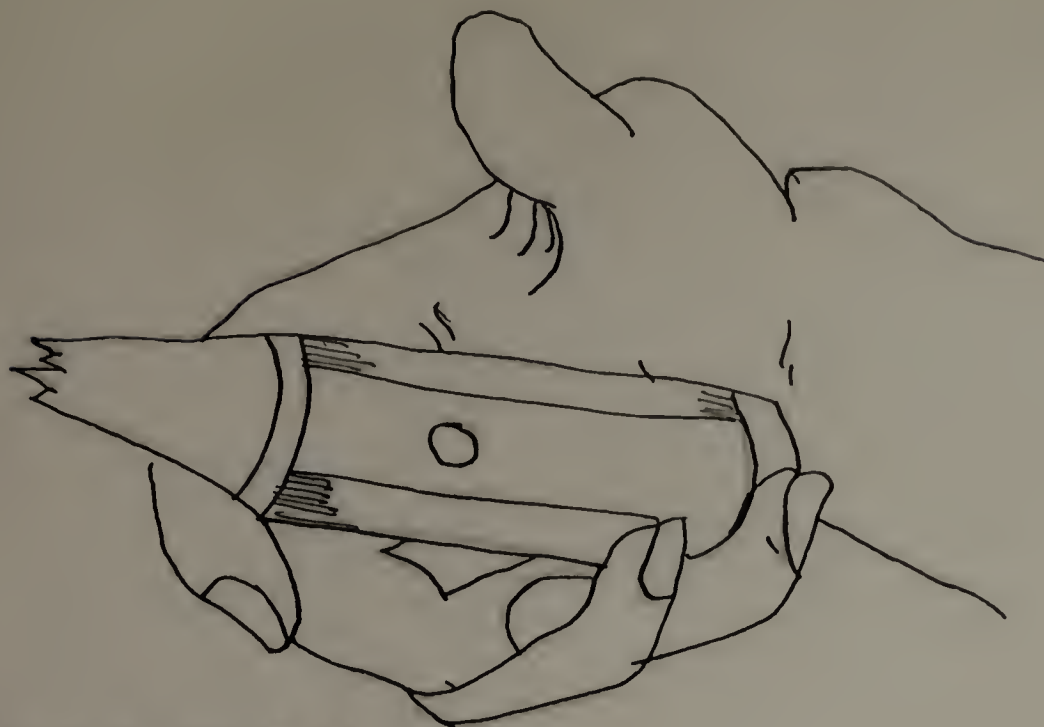
1. The Long Lob: This service, sometimes called the toss, should be very high and directed over the opponents head to the left or right corner of the back court. It is preferable to make this service to the opponent's left side.
2. The Short Service: The bird is lifted just over the net, so as to land just inside the service line at one of the corners. The return of this shot is quite often one that can be smashed.
3. The Fast Service: In this serve the bird is hit about waist high and should skim the net, being directed at the opponent's left shoulder. This shot must necessarily be hit fairly close to the maximum height of the legal stroke, or nearly waist high, so that it crosses the net very quickly.
4. Strategic Service Position: The service in the doubles game should be made from fairly close to the front and near the outside boundary line. The service in singles should be made from a position about the middle of the service court and fairly close to the front service line.
5. The Stance: One should take the serving position which feels most natural to him and yet permits him readily to come into a good position for receiving the return shot which will usually be to his backhand.
6. Holding the Bird: In serving, the bird should be held by the end of the feathers with the thumb and forefinger of the left hand. Placing the thumb on top and the forefinger inside the circle of feathers causes the bird to be almost horizontal with the floor where it may be struck from a position below the server's waist.

The technique of holding the bird until just before the moment of contact is hard to master, but it is easy on the birds and gives better control.

Receiving of Service---In receiving a service the player has certain things to remember.

1. Stand about midway in your half court, possibly a little to the left.
2. Hold the racquet slightly across the body so as to quickly meet a shot on either right or left side.
3. Concentrate upon returning the bird over near the boundary line or to an opponent's backhand.
4. Keep your eye on the bird until the return is made.

Summary---The beginner must keep in mind that to obtain proficiency he must practice often and diligently. He should become skilled in the various serves; perfect the drives, smashes, lobs, and kills; and master the more difficult drop and flip shots which require finesse.



1. Place the handle in palm of the hand and wrap the little finger around the extreme end.



2. Bring the thumb around the handle, with the remainder of the fingers, placing the thumb on the circle.



3. Turn the arm so that the face of the racquet is at right angles to the floor.

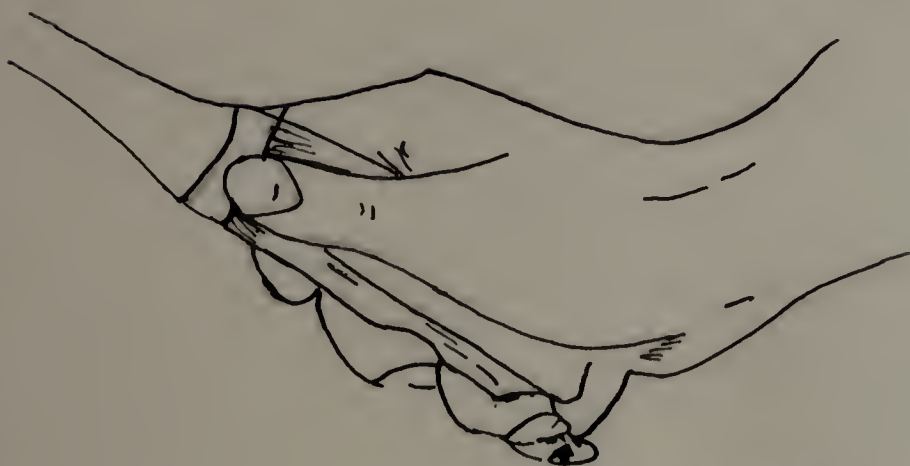
Illustrated Badminton Techniques



4. Stroking position



5. The forehand



6. The backhand

Equipment

To play a proficient game one must have good equipment. The racquet should be tightly strung, always stored away from dampness and excess heat, and kept in a press when not in use. The birds should be given extraordinary care, the feathers straightened out when ruffled, and the bird picked up rather than flicked up, by the racquet, from the floor. The following is a list of equipment used in badminton:

Clothing: Most players wear ordinary tennis costume for badminton. Rubber soled shoes are necessary. Shorts are very popular.

Racquets: Good badminton racquets cost from \$8 to \$12. A good one, kept in a press, will last a long while. To select a racquet, get one that has 20 gauge gut, with flexibility, good balance, and feels right in your hand. It should not weigh over 5 ounces.

Birds: Official shuttles cost \$.50. Be sure to secure rubber tipped birds for all outdoor play. Birds should be kept in a cool, damp spot.

Sets: A complete set, including 4 racquets, 1 net, 1 pair of posts, 1 set of marking tapes, 3 shuttles, 2 presses, and a book of rules, can be bought for \$28.50. Sets come as cheap as \$10 and as expensive as \$70.

Condensed Rules

In summarizing the rules of badminton, three things must be taken into consideration----general rules, doubles vs. singles game, and faults or errors.

General Rules:

1. In singles: the service court is long and narrow. The playing court is long and narrow.
2. In doubles: the service court is short and wide. The playing court is long and wide.
3. In singles two players are used; in doubles four players are used.
4. Usually 15 points constitute a game, whether singles or doubles, but the rules state that you may play 15 or 21 points, as agreed.
5. In a 15 point game, the side first reaching 13, but later tied, may set the game 3 to 5 additional points, or the side first reaching 14 may set the game to 3 additional points. In a 21 point game the scores may be set to 5 or 3 at 19 all or 20 all respectively.
6. The best two out of three games determines a rubber.
7. The winner of the toss has the choice of serving, receiving, or side of court. The loser has a choice of the remaining options.
8. Players change courts at the end of a game and the winner serves first. In doubles either of the two winners may serve and either of the two losers receives.
9. If a third game is necessary to determine the winner of a match, the players shall change courts when the leading score reaches 8 in a game of 15, and 11 in a game of 21.
10. Only the player to whom the serve is directed may take the service. The server shall wait until the opponent is ready.

11. After a service is delivered, the respective partners may take up any position, provided they do not obstruct the play or vision of their opponents.
12. In the first half inning of a doubles, only one out is allowed to the side beginning a game, but in subsequent half innings each partner is allowed an out.
13. One trial only is allowed on the service unless the bird is missed entirely, or strikes the net and is otherwise good, when a replay is allowed.
14. It is a "let" if a player serves out of turn or from the wrong court and scores an ace, provided the let is claimed before the next service.
15. It is a "let" if a player standing in the wrong court wins a rally and the let is claimed before the next service.
16. A receiver is not permitted to hold his racquet near the net to prevent an opponent from smashing. (He may hold up his racquet for protection.)

Singles vs. Doubles:

The rules in singles and doubles are the same except: In singles, when the server's score is zero or an even number, the bird must be served from and received in the right-hand half courts; when the score is odd, the bird is received from and delivered to the left-hand half court. Both players change courts after each point. In doubles, the service always begins in the right-hand court and the server alternates courts on each point made, until he loses the service. His partner then starts his service in his court, be it right or left, and continues until he loses his service. Opponent partners must receive in turn.

Faults or Errors:

The following infractions count an out if made by the serving side and a point if made by the receiving side.

1. If the service is made overhand.
2. If the service falls out of the court diagonally across.
3. If a player steps out of his respective court before the service is delivered.
4. If in service the server balks.
5. If in service or play the shuttle falls outside the designated boundaries, goes through or under the net, touches the roof or side-walls, or the person or dress of any player.
6. If the shuttle, in play, is hit before it crosses the net.
7. If, during play, a player touches the net or its support with his racquet, person, or dress.
8. If the shuttle is hit twice in succession, either by the same person, or players on the same side.
9. If a bird is not distinctly hit.
10. If in service the server or receiver fails to remain in his respective court and fails to keep some part of both feet in contact with the ground until the service is delivered.

Although the above is a summary of the rules, the complete set can be obtained by writing:

The Secretary
American Badminton Association
Seattle, Washington

Terminology

Ace--Unit of scoring a point.

Baselines--The lines parallel with the net, which limit the playing areas at the extremity of the court.

Bird--The shuttle or missile used.

Court--The playing area.

Fault--An attempted service or return, which falls short, hits the net, or lands outside the playing area.

Game--Fifteen or twenty-one points.

Kill shot--Term used for a hard smash-shot.

Let--The right to play the point over.

Match--The best two out of three games.

Points--Unit of scoring.

Racquet--The implement used to propel the bird.

Rubber--A match.

Service--The opening stroke of a round.

Set-up--The bird is so hit that the opponent has a good opportunity to return to advantage.

Setting--After the score is tied at certain points, the game is set and one of the players has a right to elect the number of additional points.

Service lines--Lines drawn across the court parallel to the net.

Shuttlecock--The bird used.

Toss--Flip of coin or racquet which gives the winner the option of a number of choices.

SKIING

SKIING

History

Skiing as a sport began about 1860 in Telemark, Norway and rapidly spread all over the Scandinavian peninsula. It now is the national sport of Norway. The sport has been introduced into other countries where the winter is severe, and has become very popular in Switzerland and the United States, especially in Northern New England and the Rocky Mountain sector.

Since 1920 the United States has shown a phenomenal increase in clubs, tournaments, and the actual numbers of people who are using skis. This skiing usually takes the form of countryside tours or "hikes".

The ski-jump was originated in the United States. Torjus Hemmestvelt, one of the first of the world's record-breaking jumpers came to Red Wing, Minnesota, in 1893 and jumped 103 feet. Since then the record-jumping distances have advanced steadily. In the United States, two major competitions are held, the National Tournament fostered by the United States Amateur Ski Association, and the Eastern Tournament sponsored by the Eastern United States Skiing Association. In addition to these two tournaments, a great number of lesser competitions, attracting thousands of people, are held.

Cross-country ski racing has been conducted as a

separate race. Its distances have lacked standardization. They have ranged from 5 to 25 miles. The ski clubs are tending to follow the plan of the Continental clubs and have the cross-country race combined with the ski jumping, the highest point winner in both events winning the competition.

Ski racing down a hill, either in what is called downhill or the shalom is becoming very popular. The United States clubs take to the shalom race to develop a greater number of experts in all around skiing.

Skiing, for fun and pleasure, is rapidly becoming the leading outdoor winter sport in Northern New England and is spreading to wherever the sport can be enjoyed.

Skills and Techniques

The average beginner in his first initiation to skiing attempts to pick the ski up and set it forward with a stiff-legged walking motion. Therefore the first thing to remember is never to lift the ski from the snow.

The Skiing Glide--Stand with the skis side by side and parallel, four to six inches apart. Lunge forward with the left foot, knee flexed, and push off with the toes of the right foot. Upon the completion of the lunge the shin should be a little forward of vertical and the thigh almost horizontal. The right arm is swung forward and across the chest and the left arm is back. Repeat with the right foot, making the same motions. The push-off with the rear foot is necessary only in starting.

Ski Running--The secret of success here is largely one of balance. The skis should be kept close together, the point of one about a foot ahead of the other. Most of the weight rests on the rear foot. Lean forward so that the body is at right angles to the slope. Crouch, according to the difficulty and steepness of the hill, by bending the knees forward just enough so that the eyes can just see the toes. The head is always up, the eyes forward watching the slope, and the hands together about 6 inches in front of the knees. The skis should always be kept parallel and close together.

Stemming--Coasting down a hill is all very easy until an unexpected hazard appears. Then the skier must either stop or turn. The two methods of stopping are the double stem and the single stem.

The Double Stem: The points of the skis are nearly together and the ends of the skis are wide apart. The weight is evenly divided between both skis. The arms are relaxed in front of the body with poles pointing out and to the rear. Upper part of body is slightly bent forward. At the start the skis are kept as flat as possible. To lessen the speed or stop, widen the position of the skis by straightening the legs, and also simultaneously edge the skis. To go forward again, flatten the skis.

The Single Stem: This differs from the double stem in that only the down-hill side ski is

turned. The angle with which the ski is turned determines the amount of the braking effect produced. The wider the angle and the higher up the outer edge, the slower the speed. When the speed has been slowed up sufficiently, the weight can be thrown on the upper ski again and the speed will immediately increase.

Turning--Four common methods of turning will next be described. These are the stemming turn, the kick turn, and the more difficult Telemark crouch and Christiania swing.

The Stemming Turn: First slow down. With the right foot on the downhill side the stemming will be done with that foot; by advancing the left ski and pushing outward with the left heel, and at the same time keeping most of the weight of the body on the right foot, a turn to the right will be made. Having made the turn, the weight should be shifted to the left foot and the two skis brought parallel. To turn to the left, stem with the left foot and allow the right foot to take the lead. The shoulders should always turn in the direction of the turn.

Turns can also be made by double stemming. By using greater pressure on one ski than on the other, the turn will be made in that direction.

The Kick Turn: Raise the right leg, thereby slanting the ski upward, with the rear end resting on the ground and acting as a drag. Swing the tip of the ski to the right and incline the body in that direction. Then as the right ski is implanted in the snow, the left leg is brought up and around so as to bring the left ski alongside of the right. The turn is now completed. The poles may be used to help in the turn.

The Telemark Turn: Attention is directed largely to one ski, the other being trailed or brought along with very little weight of the body on it. The point of the downhill ski is pushed ahead with the leg well extended and the rear knee bent so that it almost touches the ski. The swing may be made either to the right or to the left. If it is made to the right, the left ski and leg are lunged ahead and the right ski trailed. Power

is applied to the forward ski so as to bring the body around into a position facing uphill. The point of the forward ski is turned inward and the inside edge is pressed down.

The Christiania Swing: Both skis are brought into play with about equal force being applied to each. The movement is the same as that used by many skaters in stopping and turning suddenly. The skier turns suddenly by throwing his weight forcibly on the uphill edges of both skis, bringing the skis sideways to the slope with the points uphill and pushing the rear of the skis downhill. In this swing the weight of the body is shifted by a sideward movement of the hips.

Hill Climbing--The sport of skiing centers around gliding over level land and coasting downhill. Climbing uphill is plain labor but it is necessary. If the incline is low one may go up it with the ordinary ski glide but using a zigzag course. To go straight up the hill, either the step climb or the herring-bone must be used.

The Step Climb: Stand with the skis at right angles to the slope and step up sideways. Lift the uphill ski first and then bring the downhill ski up parallel to the other and place along side it. Repeat the process until you reach your destination.

The Herring-Bone: Face straight up the incline and turn the tips of the skis well outward. The ski is lifted completely off the snow with each step. The legs are spread well apart with the feet turned outward and the weight of the body carried forward. The weight is applied on the inside edge of the ski. The steeper the incline the greater must be the angle with which the skis are turned outward.

Ski Jumping--Beginners should practice on low hills. To perform the jump, coast down the approach. As the take-off is neared, crouch as low as possible, keeping the body inclined forward to the proper degree, and keeping the knees close together. On reaching the take-off, leap forward and downward. When the jump is at hand, spring into the air by quickly straightening the body and throwing the arms forward and upward. Straighten the legs out in line with the body and keep them close together.

As the body goes through the air, the skis are held at a slightly upward angle. This is accomplished by leaning forward and pointing the toes downward. In landing, one ski should be a little in advance of the other and the knee of the forward leg should be flexed slightly. Keep the knees together from the beginning of the approach to the end of the jump.

Helpful Hints --In skiing there are certain bits of information which are valuable. These include control, flat ski guidance, falling, getting up, and waxing.

Control: The secret of control is mastery of the turns. The turns herein described should not be regarded as ends in themselves, but as means of giving control under varying conditions of snow, slope, and speed. Every turn, every "stunt" in skiing has its use, sometime, somewhere.

Flat Ski Guidance: A ski held flat can be turned easily and the modern technique starts all its turns, except the open Christiania, with both skis flat. In the latter part of many turns the skis may be edged. It is natural to edge the skis when they are at right angles to the slope, and by edging the skis it is possible to stop more quickly after the turn is started. If the snow is hard, there is not so great a disadvantage if the skis are edged at the beginning of a turn. But when the snow is light or soft, it is better to start the turn with the flat ski guidance.

Falling: If you must fall, assume a low crouch position and then fall to the rear and to the side. Forward falls are dangerous.

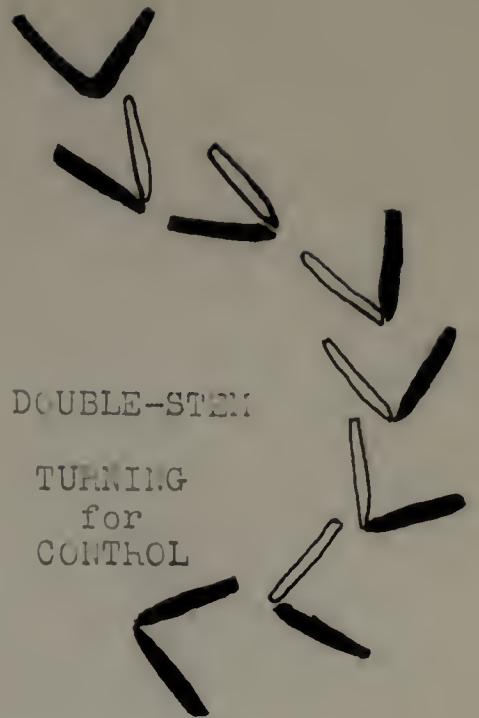
Getting Up: First unscramble the skis and poles. Then, lying on your side, get the skis downhill from you. Get them parallel and at right angles to the slope, that is, in a horizontal position. Then lift yourself onto them.

Waxing: Successful waxing cannot be done by any rule of thumb. It depends on temperature, texture of the snow, and other things. Therefore judgment coupled with knowledge of waxing is all that is necessary. This procedure is followed--water proof the wood, apply a base wax either a single coat or several coats, and then apply the surface or running wax.

ILLUSTRATED SKIING
TECHNIQUES

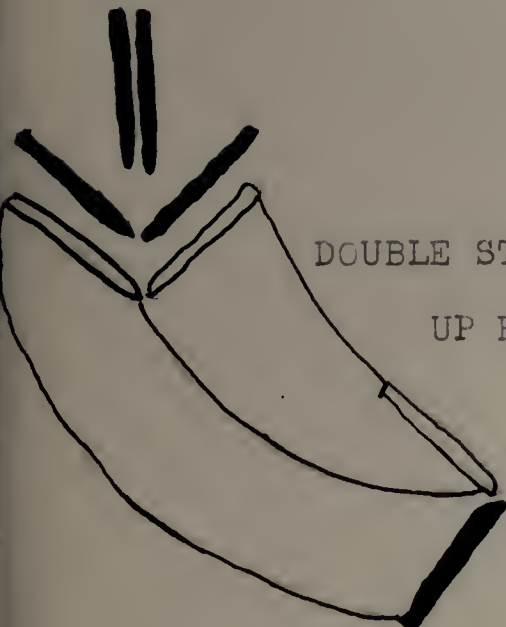


STEM



DOUBLE-STEM

TURNING
for
CONTROL



DOUBLE STEM TURN

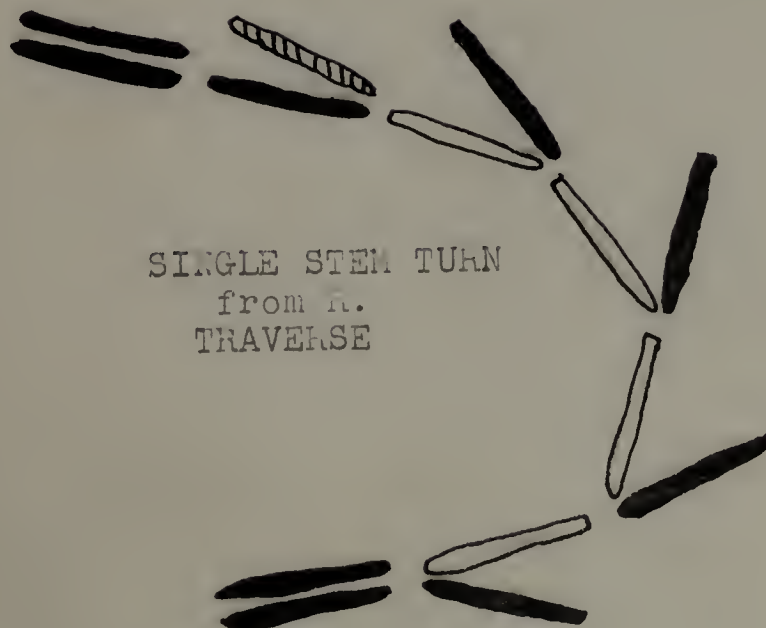
UP HILL



SINGLE STEM

TURN

UPHILL



SINGLE STEM TURN

from a.
TRAVERSE

Equipment

Of all the equipment which a skier will be urged to buy, there are only four "musts"---skis, ski-boots, bindings, and poles.

Ski Boots: Good ski boots cost from \$7 to \$12 a pair and should not fit too tightly. The heel should be grooved, the soles made of leather and at least $\frac{1}{2}$ inch thick, and the toes should be hard and box-shaped.

Bindings: Bindings cost from \$4 to \$9. Most manufacturers make good reliable bindings, so no trouble should be encountered in obtaining them.

Skis: The Norwegian broad ski measures $3\frac{1}{2}$ inches at the tip, $2\frac{1}{4}$ inches at the waist, and 3 inches at the heel. Best wood for skis is hickory. Hickory skis cost from \$10 to \$18 with an additional \$6 for steel edges.

Poles: Tonkin cane is the best buy for the beginner. Good poles cost from \$3 to \$8.

Clothing: Ordinary sports clothing is suitable, but lightweight, windproof, and snowproof garb is best. Good woolen socks should be worn. Ski mittens should also be purchased.

For further information:

The Secretary
The National Ski Association
of America
Menomonie, Wisconsin

VOLLEYBALL

VOLLEYBALL

History

When William J. Morgan began experimenting in 1895 with a new game at the Holyoke, Massachusetts, Y. M. C. A., he little dreamed nor could scarcely have hoped for the ultimate remarkable growth of the activity, which, because of the nature of the play, he termed "volleyball". Using tennis as a basis for his new game, he raised the net, used an inflated rubber basketball bladder in place of a tennis ball, and substituted the hands for the racquet. This combination not proving entirely satisfactory, the originator next used a basketball and a higher net. Later he substituted a ball of his own specifications.

The new game was readily adopted in many Y. M. C. A.'s across the country, and experiments were continually carried on with a view to improving it. Ultimately these experiments determined the size of the court, the height of the net, the number of players and various other details. All of these were incorporated into the first volleyball guide and rule book, edited by Dr. George J. Fisher, and published by the American Sports Publishing Company in 1917. The first national Y. M. C. A. volleyball tournament was sponsored in 1922 at Brooklyn, New York, with Pittsburg, Pennsylvania, carrying off the honors. In 1927 the first A. A. U. tournament was held

at Buffalo, New York, and the Buffalo Athletic Club took the honors. The ruling body at the present time is the United Volleyball Association.

Additional impetus was given the game during the World War when armies of soldiers played it both at home and abroad. Since that time it has assumed the status of an international game.

Both prior to the World War and following it, the Y. M. C. A. was instrumental in promoting the game in the United States and in foreign countries. As a consequence, volleyball is a popular activity in the countries of the Orient and South America as well as in the United States and Europe. More recently, in our own country the influence of the game has spread widely, so that it is played regularly on playgrounds, in recreation centers, school gymnasium classes, and school intramural athletic leagues.

Skills and Techniques

Volleyball is unusual in that its skills are largely confined to aerial play. A fair mastery of passing and serving is therefore necessary to all beginners in order to enjoy the game. The following skills are essential.

Passing--In handling the ball, the hands and fingers are cupped, the fingers spread (like a claw), so that the finger and thumb tips alone touch the ball. Toss the ball in the air and catch it on the fingertips. This enables one to get the "feel" of handling the ball.

Underhand--A low ball must be handled by the underhand method, which means getting under the ball and preferably playing it with two-hands. At the same time the feet should be fairly well spread and the body in a crouched position. With the lift of the ball, the body is straightened, and the hands continue to follow on up to the highest possible position, where the ball is released. A little jump is added just before the release.

Overhand--A ball above the shoulders needs to be handled by the overhand method. Here the hands are held at about the level of the face and the same crouched position is assumed. A push with the arms to the highest possible position, at the same time straightening the body with a jump at the end, should result in a high and true placement.

One-Hand--The same use of the fingertips is made in this method. The upward shove of the arm can be made, but the position of the feet rarely allow a jump. The ball should be kept rather high, thus enabling a teammate to make a play.

Serving---Handling the ball on the serve, like handling it during play, has its own special technique. The importance of the serve can well be understood when we realize that only the serving team can score. In other words, if you cannot get the ball over the net, your team hasn't much chance to win the game.

Underarm Serve: Of the three methods employed, there can be little dispute as to the superior-

ity of the underarm serve. This method of serving consists in standing with both feet back of the line, the left foot in advance of the right and the body in a stooped position. The ball is held in the left hand and toward the right side of the body. It is struck off the left hand by the right hand and, at the time of the contact, the body is straightened and a step forward is made with the right foot. The usual follow through of the arm is employed. The ball may be hit with either the fist, the open palm, or the back part of the closed hand.

Overarm Serve: The chief value of this method is speed. Both feet are back of the line, left foot in advance of the right, slight crouch, ball held in left hand above the head. The ball is hit off of the left hand by either the open palm or the fist. It is also possible to throw the ball in the air and strike it as in tennis. If the ball is hit off the hand, the body is straightened at the time of impact, and then the forward step with the right foot is made.

Sidearm Serve: This is the least used of the serves. It is very similar to the underarm serve except that the right arm sweeps around to the side and strikes the ball off the left hand. In this serve the body is not crouched so much. Considerable speed can be produced by stepping forward with the right foot as the arm swings around. "English" can be given by striking the ball on one side or the other.

The Attack

To the casual observer it would appear that the object of volleyball is merely to return the ball to the opponents' court. The thing, however, that should be done is to make an attack on the other team. Since the attack forms the method of scoring points, and since it is points that are necessary to win games, it follows that this phase of the game is very important.

Three players form a very important part of the attack. These three are (1) the "feeder" who passes the ball correctly to (2) the "booster" whose duty it is to make a good pass and give a "set-up" to (3) the spiker. This last player in turn endeavors to hit the ball so that it cannot be returned.

Feeding--He is the first man to touch the ball after it crosses the net. He passes the ball to one of the men in the forward line. The fundamental of passing must be mastered to enable him to get a good pass to his teammate.

Boosting--The booster can make or break a volleyball team, for unless he performs his work well, the ability of the spiker will be wasted. The booster in setting up the ball should face the spiker and hit the ball high in such a manner that it will come down vertically at the desired spot. An overhand pass generally brings the best results and the ball should fall close to the net and on the booster's side. A set-up that is eight feet above the net and six to twelve inches back of the net is considered good.

Spiking---This player, after receiving the set-up, should make an effort to drive the ball into the opponents' court, hard and fast. He should face the booster, gauge his jump so as to meet the ball at the proper and best place, and then try to hit it into a vacant spot. He generally plays the ball one hand to get reach and power.

Team Strategy--Always take advantage of your opponents and do the right thing at the right time.

1. If a weakness is found, play it.
2. In serving, serve to the left side of the left back.
3. Keep the other team guessing.
4. Study your opponents.
5. Anticipate plays.

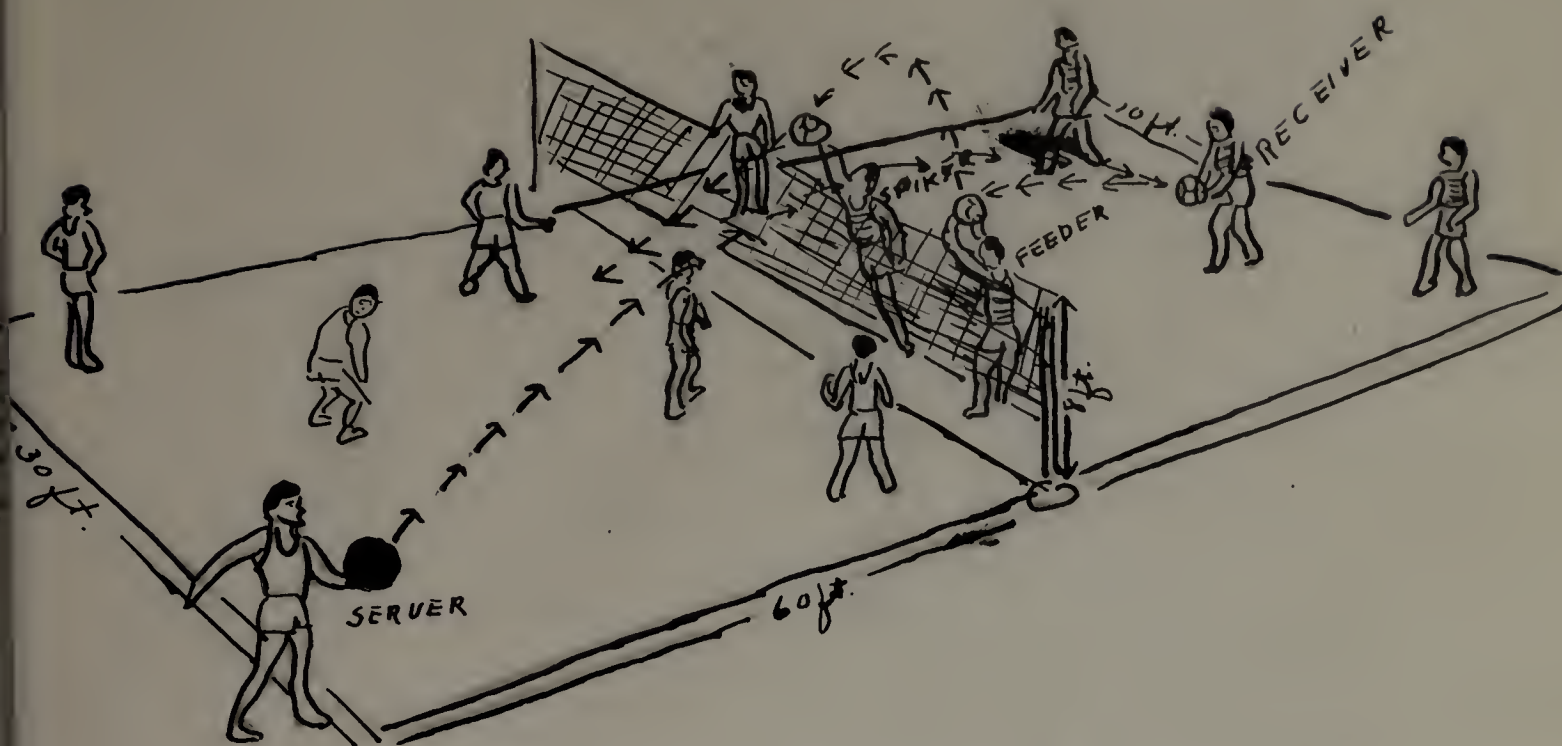
6. Net men should fake the opponents by jumping up and down.
7. During a good run, do not rest or waste time.

Defensive Play

There are certain definite fundamentals of defensive play which can be used by any team playing the game.

1. Players should assume a crouched, relaxed position, ready to move in any direction.
2. Players should be alert so that they can adjust themselves to any situation that may arise.
3. Always try hard for every shot.
4. Talk to each other and act as a unit.
5. Practice as often as possible.
6. Always play your own position.
7. Remember you are a team.

Illustrated Volleyball Techniques



Composite Picture of Volleyball Court and Players



The "Ten Point" Method

Equipment

Volleyball, being a game that can be played either indoors or outdoors, has no requirements as far as clothing goes but the following equipment is necessary:

Clothing: No special clothing necessary, ordinary sportswear advisable. Tennis shoes or sneakers are good footwear.

Ball: A leather covered ball not less than 26 nor more than 27 inches in circumference, weighing not less than 9 ounces nor more than 10 ounces. Air pressure to be not less than 7 nor more than 8 pounds. When playing outdoors, a slightly heavier ball may be used, not to exceed 12 ounces in weight. The official volleyball costs \$11. Balls can be bought as cheap as \$2.

Net: Official net, 32 feet by 3.4 inches with a 30 thread black twine costs \$12.85.

Condensed Rules

Of all the volleyball rules the following are the most important and are sufficiently complete for average play.

1. The court shall be 60 feet long and 30 feet wide with a net stretched across the center.
2. The top of the net shall be eight feet from the ground.
3. A team shall consist of 5 players.
4. A toss of the coin determines who shall get the choice of either the serve or the court.
5. Each member of the team shall serve in turn and may have one trial to get the ball over the net.
6. The server shall stand with both feet back of the rear service line.
7. There are no restrictions as to how the ball may be served, aside from the fact the server must be in the serving area. (Serving area is the right one-third of court back of the boundary line.)
8. "Side-out" is declared when a served ball hits the net.
9. If a player touches the ball or the ball touches a player, he is considered as having touched the ball.
10. It is permissible to run out of bounds to play a ball. A ball which is knocked out of bounds by the opponents must be allowed to hit the floor or wall outside before being touched or, unless successfully returned, it counts against the player touching it.
11. When a ball touches a boundary line, it is considered as being good.
12. Players are not permitted to scoop or hold the ball. The ball must be clearly batted.

13. A ball touching the body more than once is considered as being dribbled.
14. The losing team gets the first service of the next game.
15. In playing the ball, it is permissible to use any part of the body above the hips.
16. A ball is kept in play if it hits the net and goes over the opponents' court. However, on the serve there is no such thing as a net ball; if the ball does not clearly go over the net, it passes into the possession of the other team.
17. A ball hit into the net by a team may still be kept in play, provided the net is not touched by any player.
18. One man may play the ball twice during a volley but not twice in succession.
19. The ball must be returned over the net on the third contact.
20. Players may not touch the net or step over the center line. This loses the ball if the serving side is at fault, and counts a point for the serving side in case the opponents are at fault. If both sides touch the net simultaneously, the ball is played over again.
21. A back-line man may not "spike". He is allowed freedom in moving about the court but may not run up to the net and "spike" or "kill" the ball.
22. Fifteen points wins the game, provided there is a two-point lead.

For further information write:

The Secretary
Amateur Athletic Union
233 Broadway
New York, N. Y.

Terminology

Court: That space occupied by a team.

Player: Any member of a team.

Serving order: The order in which the teams are to serve.

Rotation: The shifting of men in position.

Service: Putting the ball in play by an eligible man.

Point: When the team receiving fails to return the ball legally.

Side-out: When the team serving fails to win its point or plays the ball illegally.

Dead ball: When play ceases after "point", "side out", or any other decision suspending play.

Holding: Scooping, lifting, shoving, or following the ball.

Dribbling: When a ball touches a player more than once in succession.

Spiking: Hitting the ball over the net, to the ground with great force.

Killing: The same as "spiking".

SWIMMING

SWIMMING

History

As far back in history as there are any written records, we can read about swimming among the peoples of the earth. The Egyptians, Assyrians, Babylonians, Hebrews, Greeks, Romans, - in fact, all races swam at one time or another. It is interesting to note:

In 1800 the first public bath in Scotland was opened in Glasgow.

In 1828 the first public baths in Great Britain were opened in Liverpool

In 1842 Edgar Allan Poe wrote an article on specific gravity of the body which is still considered the best analysis of the subject ever published.

In 1873 the trudgeon stroke was made prominent by J. Trudgeon.

In 1875 Captain Webb swam the English Channel, Dover to Calais, in 21 hours and 45 minutes.

The amateur record for the mile in 1877 was 29 minutes and 25½ seconds. In 1878 the record for 100 yards was 1 minute, 16½ seconds.

In 1900 the crawl stroke was introduced into Australia from the South Sea Isles.

Richard Cavill of Australia introduced the crawl stroke into England in 1902. It was known as the Australian Crawl and consisted of a two-beat leg stroke, the kick being mostly from the knee and the breathing irregular.

In 1903 there were forty-six swimming baths in England.

C. M. Daniels was the first American exponent of the crawl. He studied and improved the crawl used by Cavill.

In 1924 John Weissmuller held all the World's records for men for free style swimming up to 500 meters.

In 1931 Helene Madison held all the world's records for women for free style swimming up to 500 meters.

In 1932 the X Olympiad at Los Angeles was featured by the amazing performances of the Japanese contingent, testifying to the rapid growth of interest in swimming in the Orient.

In 1935 the outstanding performance in the swimming world was that of Catherine Rawls.

In recent years swimming has enjoyed a rapidly growing popularity, owing to the increase of public beaches and pools, and to the development of camping. It is a sport enjoyable both to spectators and to swimmers.

Skills and Techniques

The common strokes used in swimming are the crawl stroke, the back stroke, the side stroke, and the breast stroke. There are variations of these fundamental strokes.

The Crawl Stroke--The stroke is executed with the body lying nearly flat on the surface of the water, the arms operating in an alternating pulling motion with recovery out of water. The motion of the feet is a series of short alternate up-and-down kicks, working in cooperation with the arms. The body lying flat as it does, has the face downward and submerged, the breathing being accomplished by a sideward turning of the head, exposing the mouth and nose for a brief instant. Inhaling occurs through the mouth at this time, while the air is exhaled completely at the time the face is again submerged. An analysis of the stroke follows:

Movement of the Arms: As the body lies face downward in the water, one arm is extended forward overhead and the hand placed in the water directly ahead of the eye at the same side. At the same instant that the hand strikes the water, a downward pressure is exerted with the hand digging down deep into the water and pressing backward past the hip. From this point the arm swerves outward, the elbow bends, and the arm is quickly lifted out of the water. The arm then glides slowly to the original position, ready for another stroke. The action of the arms is so spaced that one starts its drive just prior to the other's leaving the water in recovery. This gives a smooth, steady pull.

Movement of the Legs: The legs should be almost straight, the kick coming from the hips with just a bit of play at the knees. This beating of the legs results in the feet moving up and down some fourteen or eighteen inches, all the while being held pigeon-toed with the ankles relaxed. The feet occasionally break water but most generally ride just under the surface. There should be a constant leg push or drive.

Breathing: Just at the instant that the right arm or top arm is being lifted out of the water, the head starts its turn to the left, a mere pivot of the neck as though one were looking

back over the shoulder. The head is not raised or lowered, nor bent to either side, but merely twists or pivots itself so as to expose just the nose and mouth. As the left arm is coming out of the water, the mouth is opened and the air gulped in. The the head pivots back so that it is again face downward in the water. As soon as the face is submerged, the air is exhaled through the nose or mouth according to the preference of the swimmer.

The Elementary Back Stroke—This stroke, like the breast stroke, is very good for beginners. It is a restful stroke and leads up to the faster racing stroke. In addition, it is very useful in life saving. The stroke is practically an inverted breast stroke.

Movement of the Arms: A position is taken in the water in which the swimmer lies flat on the back with the arms extended in front over the head and together, while the feet are trailing. Working together, the arms make a sweep outward under water and are brought down until the hands touch the thighs. Then, the arms are raised out of the water, the elbows bending slightly and are brought back to the original position ready for the next stroke.

Movement of the Legs: As the arms are brought from the thighs to the overhead position, the feet are drawn up so the heels touch and the knees point outward. On a count of two, the legs are extended outward in a pushing motion. At the count of three the legs are snapped together, the arms in the meanwhile completing their pull and sending the body into a glide.

Breathing: In this stroke the face is out of the water at all times. Inhaling is through the mouth and exhaling may be either through the nose or through the nose and mouth.

The Racing Back Stroke--This speedy racing stroke is a further development of the elementary back stroke. It is the fastest of all strokes on the back and is almost the same as the crawl stroke done up-side-down.

Movement of the Arms: Lie on the back with the right arm extended in a forward position, the left arm near the hip. The head should be forward enough so that the feet can be seen. The

extended right arm, with the palm turned outward, makes a sideward and downward sweep. The arm, slightly bent, makes a shallow pull, and as the arm comes through the palm touches the thigh. The sweep of the arm is done slowly and steadily until the hand has almost reached the side of the body, at which time a quick sculling motion is executed as the hand reaches the thigh. The arm recovery is made by rotating the forearm inward, bending and lifting the elbow rapidly, and then sending the arm forward slowly. As the right arm is pulling down the recovery is being made with the left. It is extended and stretched upward and sideward, ready to execute a similar pulling motion. The arms are kept constantly rotating.

Movement of the Legs: The leg motion is a constant thrashing up and down of first one leg and then the other, with emphasis on the upward thrash. The number of beats to an arm revolution is variable, with six being the number most commonly used.

Breathing: The common practice is to inhale through the mouth and exhale through the nose or through the nose and mouth. On making turns, when the head goes under, a vigorous exhaling will prevent the water from running into the nose.

The Breast Stroke--This stroke is restful, rather easily mastered, and in addition to being used in competition, it makes a good stroke for underwater swimming and rescue work.

Movement of the Arms: The body lies flat on the surface of the water, the face submerged, the legs and arms extended, the palms down with the thumbs touching each other. In one quick motion the palms are turned outward so that the backs of the hands face each other and the arms are swept sideward until almost even with the shoulders. In the course of this sweep of the arms, the hands finish about eight inches under the water. This sweep of the arms is sideward and a little downward. The recovery is accomplished by having the elbows drop to the side, the hands coming together in front of the chest and under

the chin. From this position the arms are shot straight forward to the original starting position.

Movement of the Legs: The legs start straight and relaxed. Then they are pulled up with the knees out and the heels almost touching. Then the knees are straightened so the legs form a "V". This straightening is done very vigorously to get momentum. From the "V" the legs are snapped together at the count of three.

Breathing: From the position of the body lying flat on the surface, the head is raised and a quick inhaling of breath is made through the mouth. As the arm recovery is made, exhaling starts. As the arms are shoved forward, back to the original starting position, the inhaling is completed.

The Side Stroke--The side stroke is very good for long distance swimming where speed is a secondary consideration. It is very restful and can be used on either side.

Movement of the Arms: By pushing off from shallow water or the edge of the pool, one comes into a gliding position on the right side, lower arm extended, and the top arm kept at the thigh. The lower arm pulls downward making a wide sweeping circle. The arm, straight at first, bends as it nears the stomach and then relaxes. At the time of the sweep, the top arm is gradually being slid along past the shoulder and straight out in front, arriving at the extended position just as the lower arm is being relaxed. Then the top arm makes a similar downward pull. It too is relaxed at about the time the hand reaches the thigh. Meanwhile the lower arm is being lifted again into starting position.

Movement of the Legs: As the lower arm starts its downward sweep, the knees are brought up as though one were in a running stride, the bottom leg moving forward and the top leg backward. A scissors kick is executed while the bottom arm is on its downward pull. The legs have completed their kick and are again straight as the downward pull is completed.

Breathing: The inhaling is done through the mouth

as the bottom arm is recovering. Exhaling is done through the nose or through the nose and mouth as the downward pull of the bottom arm is being made.

The Single Over-Arm Stroke--This is a very good stroke for long distance swimming, as it is a little faster than the side stroke.

Movement of the Arms: From a gliding position, lying on the right side, bottom arm extended, top arm being along the side with hand on thigh. The bottom arm pulls downward, making a wide sweeping circle. The arm, straight at first, bends as it nears the stomach, then relaxes. While the bottom arm sweep is being made, the top arm is lifted from its position at the hip. The elbow is bent as the arm passes the head, then the arm is extended so that the hand dips into the water as far over the head as it can reach. The fingertips just clear the water. Then the downward pull of the arm is made through the water until the arm comes back to its original starting position. This lifting of the top arm out of the water during recovery marks the only difference between the side stroke and the Single Over-Arm Stroke.

Movement of the Legs: As the bottom arm starts its downward sweep, the knees are brought up as though one were in a running stride, the top leg moving forward and the bottom leg moving backward. A scissors kick is executed, this movement being made while the bottom arm is on its downward pull. The legs have completed their kick and are again straight as the downward pull is completed.

Breathing: Inhaling through the mouth is done as the bottom arm is recovering. Exhaling is done through the nose or through the nose and mouth as the downward pull of the bottom arm is being made.

The Trudgeon Crawl Stroke--This is one of the fast swimming strokes and is used a great deal in long-distance swimming. The difference between it and the crawl is the kick. The leg movement combines the crawl flutter kick and the scissors kick.

Movement of the Arms: The starting position is on the right side, right arm extended, left arm at side of the thigh. The bottom arm pulls downward in a long sweep, and, as it nears the thigh, the left arm or top arm starts its recovery. This recovery of the top arm rolls the body from a sideward position to a face downward position. As the top arm dips in the water and starts its downward pull, the bottom arm makes its recovery.

Movement of the Legs: The legs execute a four-beat flutter kick while the bottom arm is making its downward sweep or pull and then the legs make a scissors kick while the top arm is making its downward pull.

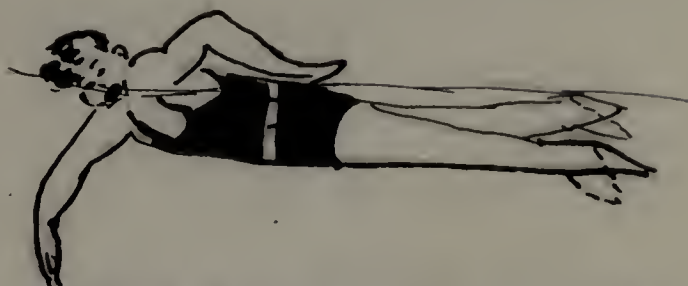
Breathing: As the downward pull of the top arm is being made, the head is pivoting ready for the inhalation; then as the top arm recovers, the head has become submerged and exhaling takes place as the bottom arm is making its pull.

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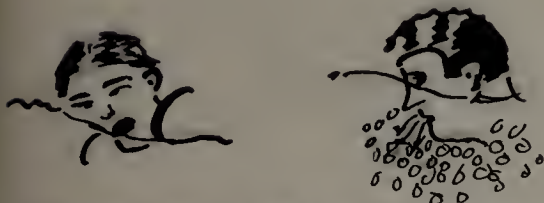
Illustrated Swimming Techniques



Arm Movement in the Crawl



Flutter Kick Used in the Crawl



Breathing Used in Swimming



The Back Stroke



Starting Position--Breast Stroke



Arm and Leg Movement Used in the Breast Stroke.

Condensed Rules

In swimming the following general rules are essential for any type of competitive swimming.

1. In dual meets there are generally two men allowed from each team in an event.
2. The free-style relay team is composed of four men.
3. The medley relay team consists of three men swimming in the following order: back stroke, breast stroke, free style.
4. As a general rule, a contestant is not allowed to take part in more than three events.
5. Points are usually scored as follows in dual meets: free style - first place - 8 points, second place - 4 points; medley relay - first place - 6 points, second place - 3 points; all other events - first place - 5 points, second place - three points, third place - 1 point.
6. At the start the contestants, after line-up behind their starting places, are given the signals: (1) "get on your marks," (2) "go." Three false starts disqualify a contestant.
7. Disqualification may result if a contestant gets off his course and touches another.
8. A side-stroke movement, if used in the breast stroke, is cause for disqualification.
9. In making a turn while swimming, the breast stroke, both hands must touch the end wall of the pool simultaneously. Similarly, at the finish of the breast stroke, both hands must touch the pool wall simultaneously.
10. Back-stroke swimmers are in the water when started, thereby having the help of a push-off from the edge.
11. In making the back-stroke turn, contestants are required to let the foremost hand touch the edge before the turn is made.

For further information consult:

The Official Swimming Guide
Available at any Sporting Goods store.

CANOEING

CANOEING

History

We find three distinct types of canoes in North America, the development of each type being governed principally by the material at hand. In Eastern North America the Indians developed the birch-bark canoe, it being made from large sheets of thick, heavy bark taken from the paper birch and attached to a framework of white cedar strips. Thongs made from fibrous roots, usually swamp apruce, were used to sew the bark together, while lacings made by stripping the inner bark of basswood served to attach the bark to the gunwales. A mixture of hot pine pitch and tallow, blacked with charcoal, was used to seal up the seams and make the craft watertight. This craft, in addition to being fairly durable, was easy to manage, buoyant, and more than any other craft possessed the quality of lightness needed in a country where portages were numerous and long.

The dugouts or pirogues were developed by the Indians of the South and West. These were made by shaping and then hollowing out the trunk of a tree, usually white pine, eastern white cedar, or western red cedar. These as a rule were heavy, unstable, and of little use in fast water.

The most interesting type of canoe was the kayaks and oomiaks of Eskimauan origin. These consisted of a

frame of wood or whalebone, over which was stretched skins, generally seal rawhide.

The white man has taken as his model the Indian's birch-bark canoe, and with the use of modern tools has developed beautiful wood and canvas canoes. The canvas-covered canoes with open gunwales have been widely distributed and this is the type generally favored at present.

Skills and Techniques

There are many acceptable methods of handling a canoe with grace and effectiveness, with enthusiasts ardently supporting the merits of each. The following techniques are those used by many expert canoeists and the ones that should be mastered by beginners.

The Kneeling Position--Although the average paddler is seen perched high up on the seat, the ideal position for paddling is kneeling on the bottom. The kneeling position for paddling gives better control of the canoe and calls for less effort and strain. It places the center of gravity lower in the craft, and consequently the canoe is less shaky and wobbly. Cushions or knee pads are necessary for beginners. Body support can be gained by kneeling in front of a thwart and partially resting the buttocks on it. Another way is to kneel in front of a bag of duffle and rest the buttocks on it. The legs should be well spread while kneeling.

Location of Paddlers--When there is only one occupant in the canoe, the best control is obtained by having the paddler to the fore and aft center. The farther to the stern the paddler moves, the deeper in the water that part of the canoe will sink, and the higher in the air the bow will rise. The higher the bow extends the more it is affected by the wind and the more difficult the canoe is to manage. The paddler should thus kneel on the floor considerably in front of the usual position of the rear seat. With two occupants, both should kneel well toward the center of the canoe, rather than one at each end. The burden the canoe is to carry should be as near the center as possible.

Handling of the Paddle--The paddle should be held naturally. The upper hand fits naturally over the knob or upper end of the paddle. The lower hand grasps the handle an inch or two above the blade, with the thumb outside of the paddle instead of encircling it. This will prevent scraping it against the thwart. While holding the paddle in this way and kneeling in an erect position, dip the paddle in the water an easy reaching distance ahead, then push the upper hand forward with the shoulder and back. The lower hand serves the purpose of a fulcrum; while the lower hand moves backward throughout the stroke, there is no marked backward pull with

the lower arm until near the end of the stroke. Do not hesitate at the end of the stroke, but withdraw the paddle immediately and reach forward for the next stroke.

Strokes--There are as many methods of paddling as there are paddlers. However, they all use approximately the same strokes and fundamentals. The following strokes are the more important ones.

1. Bow Stroke: This is the stroke used by the bow paddler when two occupants are operating the canoe. The paddle is dipped into the water as far forward as it is comfortable to reach and the pull made parallel with the edge of the canoe. When the lower hand has reached a point in line with the hips, the pull has been completed. Toward the end of the stroke, the inside edge of the paddle is turned toward the stern, the upper hand pulled toward the chest, the lower hand raised slightly, and the blade thus caused to emerge cleanly from the water. These movements bring the flat surface of the blade parallel to the water, and it is brought forward in this position, passing just high enough to miss the water, until it is back to the starting position. No steering is done with this stroke.

2. Backwater: The purpose of this stroke is to stop the forward motion of the canoe, or to cause it to move backward. This stroke is nothing more than a reverse of the bow stroke. Dip the blade in the water well back, and exerting most of the pressure with the lower hand, push the blade forward. At the end of the stroke, turn the inside edge of the paddle toward the stern, lift out of the water, and feather the blade back parallel to the water for the next stroke.

3. Sweep: This stroke is used by the bow paddler and its purpose is to swing the bow of the canoe toward the opposite side from which the paddler is working. The sweep strokes (full, half, reverse) take place in the quick maneuvering of a canoe, and they will turn the bow away from the paddler's side without diminishing the speed of the canoe. In these strokes the paddle is held as nearly horizontal as possible with the edge of the paddle up. The full sweep starts with the edge of the paddle as

near the canoe as possible, and is completed by reaching out and making a complete arc. The half sweep is just a smaller arc. The full sweep used in the bow will quickly swing the canoe around, while the half sweep will merely assist the sternsman in steering. The reverse sweep causes the canoe to swing towards the paddling side, and its execution is just the reverse of the sweep stroke.

4. Draw Strokes: The draw strokes are used to draw the canoe toward the side on which the paddler is working. In these strokes one reaches out as far as possible with the paddle and then draws the canoe up to the paddle. This may be done by reaching straight outside, diagonally forward, or diagonally astern. The recovery may be made in two ways: (1) by turning the blade sideways and pushing it back to start the next stroke without withdrawing it from the water; (2) by lifting it from the water and repeating. The bowman, by making a slight draw on each stroke, can make the canoe go straight ahead without a paddler in the stern.

5. Push-Over: This stroke serves to move that part of the canoe where executed, away from the paddle. To execute the stroke, rest the shaft of the paddle on the gunwale, at right angles to it, with the blade touching the water; knife the blade into the water until it is completely submerged and the shaft extends perpendicular to the water; then turn the blade parallel to the gunwale, pull the upper hand toward you and pry the shaft against the gunwale. To recover, turn the back edge of the paddle toward the gunwale and draw the blade back without withdrawing it from the water, and repeat the stroke.

6. "J" Stroke: The "J" stroke is used in the stern and its object is to move the canoe forward in a straight line. It is the standard steering stroke and is really a bow stroke with a push-over on the finish. The completed stroke looks like the letter "J". The stroke is made by dipping the paddle forward and executing the bow stroke, the paddle coming back in a sweeping arc. At the end of the stroke a push-over is executed, thus keeping the bow on a true course.

7. Underwater: In this stroke the paddle is not withdrawn from the water at all. The stroke is silent and is executed in a manner similar to the "J" stroke except that when the stroke is completed the paddle

is not lifted out of the water but is feathered underwater back to the starting position.

Safety

Popular opinion quite generally subscribes to the erroneous view that the canoe is treacherous and dangerous. In the hands of the capable users, the canoe is a reliable, steady, stable, and dependable craft. Its extreme buoyancy makes it unsinkable in any position.

Certain precautions are necessary in canoeing, however, as in any activity taking place on the water. The ability to swim is of primary importance, but this alone does not mean safety in a canoe. A knowledge of canoeing is equally as important, and if these canoeing skills are properly mastered, the swimming skills will seldom if ever be needed for personal safety while paddling. Safety in a canoe depends upon the following two factors.

Safety Knowledge--The following points should be emphasized and insisted upon in all organizations where canoeing takes place:

1. Master all canoeing strokes and be able to perform them smoothly and rhythmically before venturing on wide expanses of water. Be able to paddle from both the seating and the kneeling position, using the latter always in rough water.
2. Never attempt to change places on the water under any conditions.
3. Watch carefully the weight distribution in the canoe--keep it low and centered. In entering a canoe from the dock, place the hands on the gunwales and step on the midline--this serves to lower the weight and to center it. A canoe should be entered near the end rather than the middle in that it

is easier to center the weight here than in the wide middle section.

4. Remember that there are waves that are stronger and winds that are mightier than any man. Do not venture out on rough water. In bucking wind and waves, the bow of the canoe should be headed into or away from the waves. Always put the weight in the bow so that the weight cannot lift the canoe.
5. In case of an upset, hang onto the canoe. The canoe cannot possibly sink. Remember that an upturned canoe will slowly but surely drift ashore.

Safety Devices-- There are two safety devices that all paddlers should know. The first consists of loops of rope tied to the gunwales. These loops are about eight inches long and made of light rope. In case of an upset, the hand can be thrust through the loop. The second device consists of tying the handle of the paddle to the canoe with about four feet of rope. This should be resorted to only if an upset is imminent. In case of an upset, one naturally clings to his paddle; therefore by tying it, the canoe cannot be lost.

Illustrated Canoeing Techniques



Bow Rudder

Backwater

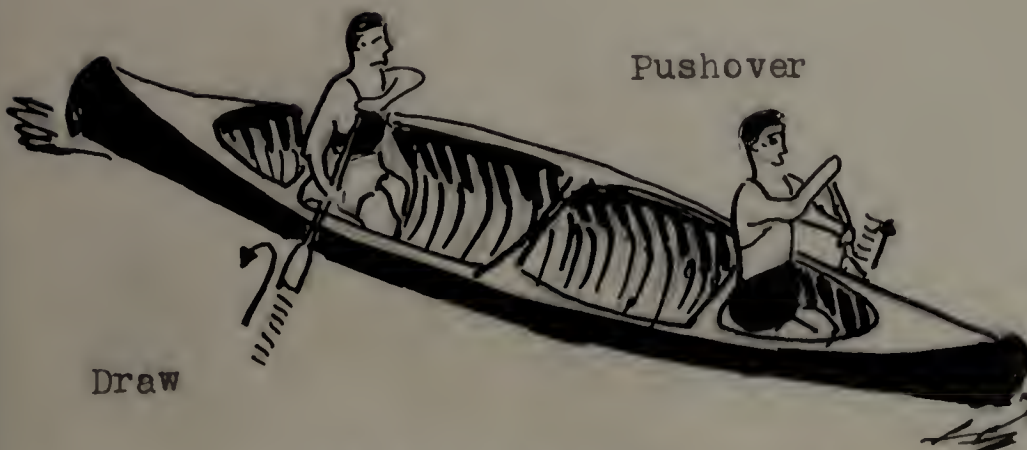
Backwater and Bow Rudder Strokes



Draw

Sweep

Sweep and Draw Strokes

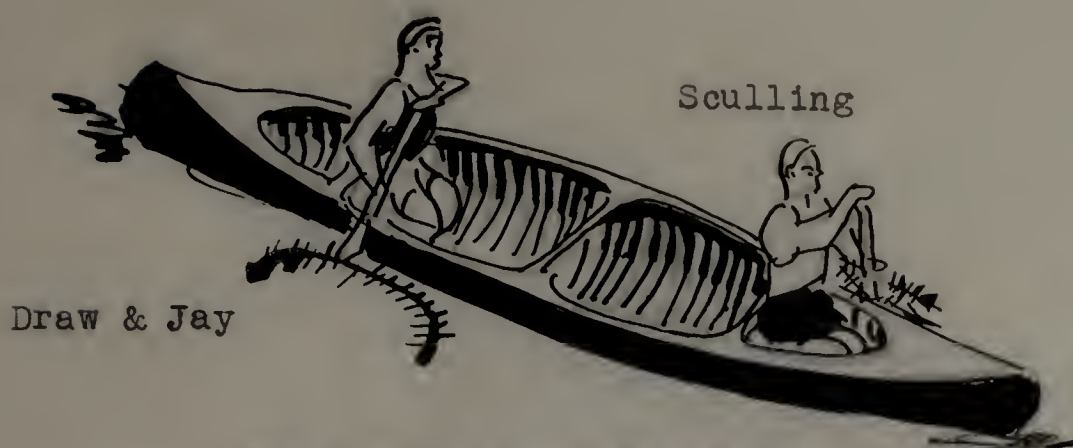


Pushover

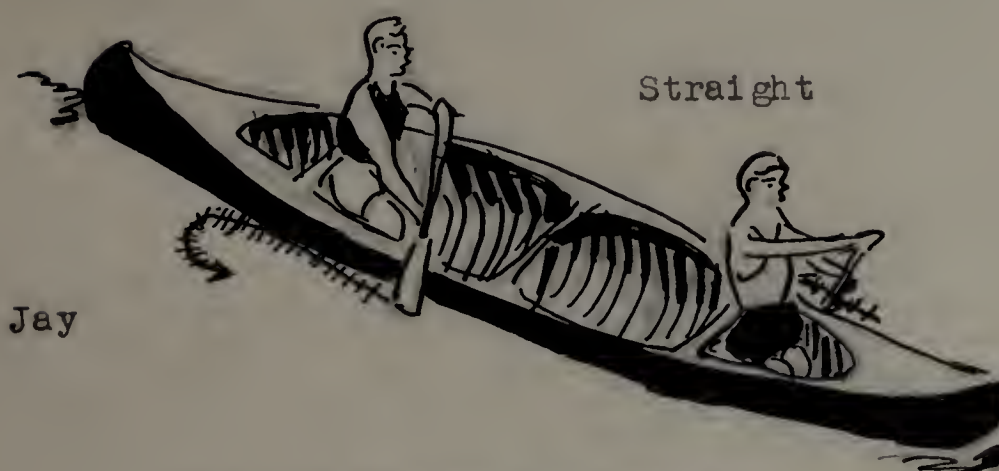
Draw

Draw and Pushover Strokes

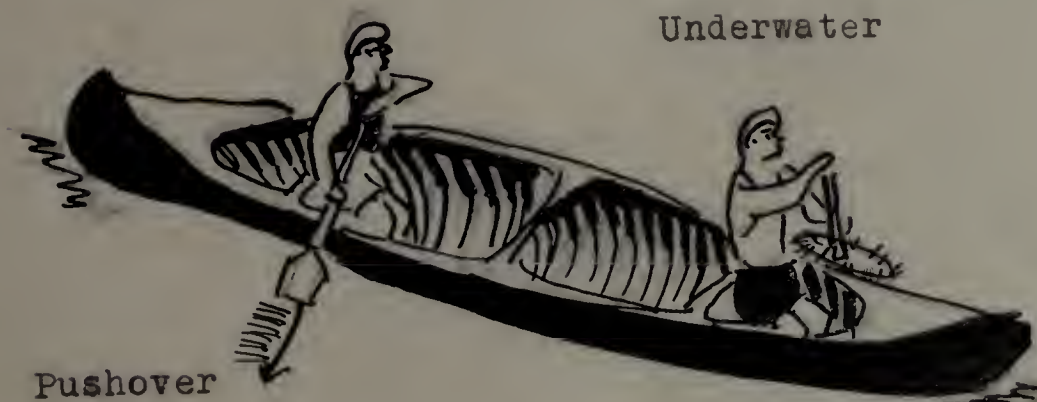
Illustrated Canoeing Techniques



Jay ("J") with Draw, and Sculling



Jay and Straight Strokes



Pushover and Underwater Strokes

Equipment

Many are the styles and types of canoes in evidence around the average resort and canoeing club. Although they may well serve their purpose as pleasure boats, these flashy, sporty models are scarcely usable in cruising and far from ideal for instructional purposes. The following equipment is necessary for canoeing.

Canoe: Guide model the best - about 18 feet long, 34 inches wide at widest point, and 13 inches deep. Equipped with a low keel. Cost varies as to type wanted.

Paddles: Spruce the best. About 3 to 6 inches shorter than your height. Size of handles depends on preference.

Seats: Not necessary. Can be purchased with the canoe. Prices vary as to kinds. Used either in stern or bow.

FISHING

FISHING

History

Fishing is among the most ancient of human activities, and may be said to date from the time when man was in the infancy of the stone age. It is probable that attack on fishes was at first much the same as attack on animals - the use of crude weapons. Observation soon showed them that fish fed greedily on one another and on other inhabitants of the water or living things that fell into it; so arose the idea of "catching by feeding." Hence came the notion of the first hook, a piece of flint or stone which could be swallowed with the bait but which could not be ejected afterwards. Variations of this form were used all over the world but the idea was the same.

The evolution of the fish-hook is still a matter of doubt; however it is logical to conclude that once the custom of barbing fish-spears had been established, the idea was also put in practice on hooks.

Fishing has spread rapidly in the United States to a game of skill and sport rather than a means of making a livelihood. Clubs have sprung up all over the country and contests of bait and fly casting take place every year. It has become the sport of millions both young and old and has not yet reached the peak of its popularity. The sport is expected to grow until every man, woman, and child is "fishing" conscious.

Skills and Techniques

1. Fly Casting

Many angling authorities concede that fly casting is very simple in its principles and is much easier to learn than bait casting. Its motions, at least, can be learned in a few minutes by any who will devote a thorough study to the following material.

Assembling the Rod: Joint the middle and tip first. Then match the butt joint. Be sure that all guides are in line.

Placing Reel on Rod: Set reel on butt of rod with handle of reel on right hand side and guides and reel on under side of rod. Locking reel seats keeps the reel in tight position at all times.

The Line: Assume the line is on the reel. The line should be drawn through the first guide. Then through the remainder of the guides and the tip of the rod.

Casting--With the line lying straight out in front of you, pick up the rod by the cork grip using the right hand. With the thumb and finger of the left hand, grasp the line between the reel and the first rod guide.

Hold the line with the rod tip slightly elevated. The hand grip is firm, the thumb on top and extending along the grip, and the elbow, close to the body. It is important that the elbow remain in this position.

The back cast means that by a smart upward twitch of the rod the line lying out in front of the caster will be picked up and propelled upward and backward over the caster's right shoulder. A high backcast is important. Process: With a quick upward snap of the wrist, which brings the forearm into play secondarily, bring the rod tip upward toward the right shoulder, leaning the rod slightly to the right of the point of the shoulder. During the upward snap, the weight or feel of the rod will be in a pressure against the two first fingers of the right hand, curled underneath the cork grip, with a downward pressure exerted by the heel of the hand. Check the rod sharply when it reaches a point just beyond or

back of the perpendicular. The power or spring of the rod, plus the elasticity of the line will propel the line upward and backward.

2. Bait Casting

Each year finds a vast army of fishermen turning to the bait casting method of angling because of the increased sport, thrills and joys experienced. The following information is necessary to the beginner.

Assembling the Rod: Split bamboo bait casting rods are generally made in two sections. A ferrule is carefully fitted to each section of the rod. When putting these ferrules together, always make sure that the guides are lined up. Next, place the reel on the rod.

Placing the Reel on the Rod: Each reel is fitted with a clip. This clip fits into the reel seat on the rod. When holding the rod with the guides up, the reel should be on top of the rod. The line then travels from the reel directly through the line guides. Locking reel seats prevents the reel from loosening. Put the line on the reel.

The Line: A "filler" is wound onto the reel and a good line is attached to the filler. A 6 or 9 inch cable wire leader is placed on the loose end of the line.

Lure: Whatever is used to attract the fish. This is attached to the end of the line.

Casting--Use your wrist and not your entire arm if you wish to cast with the least effort and the greatest efficiency. There are three distinct movements to each cast. After you grasp the rod in the right hand around the trip, turn the wrist until the reel is in a vertical position, handle on the upper side. Then place the thumb on the spool of the reel. Point the tip of the rod back over your right to an angle of about 45 degrees. Now bring the rod forward with a steady, sweeping motion, with the tip of the rod following the path of the lure in its forward flight towards the target. Release the thumb at the beginning of the downward movement the instant the lure starts traveling forward, which will allow the lure to be shot into the air and out over the water.

Another method of casting is the side cast, used when trying to place the lure under overhanging foliage. This is done the same as the overhead except that it is from the side.

Retrieving: While the lure is still in the air the rod should be changed from the right to the left hand, to have it in readiness for retrieving. Either reel in with uniform speed or reel in a few feet, then stop, then reel in a few more feet. The latter method is best.

Equipment

In fishing the following equipment is absolutely necessary -- rod, reel, line, leader, and lures.

Rod: Fly casting - Split bamboo, 8-9½ feet long, 3-5½ ounces in weight, cork grip. Cost \$5 - \$50.

Bait casting - Split bamboo, 3-6 feet in length, 5½-6 ounces in weight, cork handle. Cost \$1 - \$25.

Reel: Fly casting - weight 1½ times that of rod, narrow arbor type, easy to pull line from. Cost \$.50 - \$15.

Bait casting - weight 1½ times that of rod. Cost \$3 - \$25.

Line: Fly casting - Heavy enough to develop power. Size of line depends on weight of rod.

Bait casting - A filler, which can be any cheap line, and a silk line of about 50 yards. Cost all prices.

Leader: Fly casting - Single or tapered, 6-9½ feet in length.

Bait casting - Light and durable, in 4 feet wire or gut.

Lures: Fly casting - All types of flies found in section where fishing. Can be bought or made.

Bait casting - All types at all prices.

For further information

Sidney Kauffman
Department of Physical Education
Massachusetts State College
Amherst, Massachusetts

Hints to Remember

There are several "helpful hints" that you will learn by experience. The following group is one containing only the most important.

1. Never place a split bamboo rod away in a cloth bag or in an aluminum case, if either the bag or the case is damp.
2. Keep a taut line, but do not try pulling your fish in by mere strength. Play the fish and you will get the most fun and thrills when fishing.
3. Inspect the guides on your rods periodically. A slight crack will cause your line to wear out rapidly.
4. Always wet your hands before removing a fish from the hooks on your lure.
5. Don't be a fish hog. Catch only the fish you need for yourself.
6. Be a good sport and return to the water any under-size fish that you may catch.
7. Help the other fellow. He may need advice and experience.

SOFTBALL

SOFTBALL

History

Softball is an American game. Once it was known, played and laughed at as indoor baseball. For many years it remained a joke. Tagged with such monikers as mush-ball, kittenball, and other prissy names, the sport had a most unhappy youth. Folks stayed away from it in large numbers. Yet today softball stands on its feet, one of the most popular playing games in the United States, and likely so to stay.

Softball was invented by George W. Hancock at the Farragut Boat Club in Chicago, Illinois, in the year 1887. It started as an indoor game but thanks to recreation directors it took hold faster outdoors, becoming popular in playgrounds all over the country. For many years, however, all attempts at organizing the sport fell through. Then in 1923 the National Recreation Congress appointed a committee of recreation directors to draw up rules and standardize the game. The name softball was first invented by Walter C. Hakanson, a Y. M. C. A. director in Denver, Colorado. Since 1926 it has been known by that name.

In 1934 a meeting of all organizations interested in furthering the sport was called in Washington, D. C. The National Softball Association, the Amateur Softball Association, the Y. M. C. A., the Catholic Youth Organization and others responded, and from this meeting the Amateur Softball

Association of America was formed. A Joint Rules Committee was also organized. The rules were standardized, published, and the game began to capture the fancy of the American sport-playing public. At this time, according to sporting goods dealers, it had jumped in a few years from comparative obscurity to being the fastest growing branch of athletics in the United States.

Skills and Techniques

In softball the following skills are very important and should be mastered before an attempt at playing the game is made -- catching, throwing, pitching, batting, and sliding.

Catching--As in regulation baseball, there are two fundamental ways of catching a ball: (1) with the hands cupped, sides of the two little fingers together, palms upward and fingers pointed outward or downward, and (2) with the hands cupped together at the thumbs, palms outward and fingers pointed upward or sideward. The angle of the hands must vary with the type of ball being received, whether a ground ball, a drive, a fly ball, or a thrown ball; also whether the ball is being received at a low, medium, or high, or outside position. Always catch the ball on the throwing side. Meet the ball with relaxed hands. Always use a comfortable stance.

Throwing--There are several accepted forms of throwing, and in each method one should learn to take advantage of the correct body position, shifting the weight from one foot to the other, following through in the direction of the throw, and retaining balance for possible follow-up plays. Throws must vary with the type of play involved and the body position of the thrower. The thrower usually uses upon occasion either a sidearm, underarm, or overarm throw.

Pitching--Because of the required underhand delivery, the short distance from the pitcher's box to home plate, and the size of the ball, it is difficult to get as much curve on the ball as on a regulation baseball. However, pitchers in softball can usually become proficient if they acquire the following essentials:

1. Control: Much of the problem of controlling the ball centers around the handling of the feet. The pitching rules permit the pitcher to take only one step in delivering the ball; after the ball has been released, however, he may take as many steps as he chooses. Therefore the pitcher should practice this step

until it becomes automatic. In delivering the ball, it is well to acquire the habit of taking one long step forward with the left foot, and in taking the weight on the left foot to relax the knee so that it acts as a spring, thus stopping the violent forward motion without a sudden jar.

2. Speed: A pitcher should first develop control and then continually increase his speed until he reaches the point where his control disappears. That is the limit of his speed for pitching.
3. Deception: The deceptive tactics used by softball pitchers are of two types, (1) change of pace, and (2) use of curves. A pitcher should always remember to vary the speed of his ball and also the speed of his delivery. This will confuse the batter. Curve balls tend to make the batter "pop-up" and therefore should be mastered and thrown.

Batting--A good batter must have a keen eye, a smooth, level swing, and confidence in his ability. Every player has his own stance but they agree on the generalization that the forward foot and shoulder should be well into the line of the pitch, and the rear foot and shoulder should be a few inches behind that line. From this stance the batter should "step-into" the pitch. When swinging, the elbows should be well away from the body, the front elbow about on a level with the hands, the bat parallel with the ground, whether swinging at a low or high ball.

Sliding--The hook slide is executed by throwing the body to the left of the base, extending the left leg out ahead or bending it underneath the right leg, which is used to hook the bag as you slide in. Slides should be used to (1) evade a baseman, and (2) stop at a base without having to slow up.

Summary--In softball the things to remember are (1) always be natural, loose, free and easy with the body and (2) master the fundamentals. This will lead to a good softball player.

Equipment

The equipment needed in softball is inexpensive and easy to get. The following essentials are necessary.

Clothing: No special form of clothing is required but sometimes softball suits are worn.

Bat: Bat must be marked, "Official Softball Bat" to indicate that it conforms to specifications. It is 34 inches long and not more than $2\frac{1}{2}$ inches in diameter in its widest part. Cost about \$1.80.

Ball: Official softball carries the A. S. A. insignia and the U. S. patent number 2,060,987. Unless both appear it is not the A. S. A. Official Tournament Ball. Cost about \$2.

Condensed Rules

In summarizing the softball rules, one must remember they are the same as baseball with the following exceptions:

1. Ball: Weight of softball: 6 - 6 $\frac{1}{2}$ ounces. Measure: 11 $\frac{7}{8}$ - 12 $\frac{1}{8}$ inches in circumference. Raised, out-seam balls are illegal.
2. Bat: The bat is the same as an ordinary baseball bat except that it is not more than 34 inches in length; not more than 2 $\frac{1}{8}$ inches in diameter at longest part; safety handle must not extend more than 15 inches from end of handle.
3. Number of Players: 10 players in softball, addition of a "short fielder."
4. Game: 7 innings, unless team second at bat scores more runs in 6 innings than the opposition in 7.
5. Forfeited Game: If, after play has been suspended by the umpire, one team fails to resume playing within two minutes after the umpire has called "play."
6. Pitching: Ball must be thrown underhand with follow through of hand and wrist beyond the straight line of the body.
7. Batting: A fair batted fly ball going over the fence or into the stands at not less than 200 feet from home base shall entitle the batter to a home run, etc.
8. Entitled to Bases: If a ball delivered by the pitcher passes the catcher and touches any fence, building or backstop within 25 feet of home plate, all base runners shall be entitled to advance one base.

Further information may be obtained by writing to:

The Secretary
Amateur Softball Association
343 Morrison Hotel
Chicago, Illinois.

GOLF

GOLF

History

There is some controversy as to whether the game of golf originated in Holland or in Scotland. The Holland authorities claim the game was played in their country and contend that they have writings to prove it. The Hollanders have had placed in the British Museum a drawing made in the 14th century that shows three men holding small, round objects in one hand and sticks in the other. One of the sticks has a round knob on the end which they contend corresponds to our modern golf clubs but which many believe to have been an inverted walking stick. If these claims are authentic, then the game of golf was originated fairly early in the 14th century. Otherwise, it was late in the 14th or early in the 15th century.

The game was none too graciously accepted at first, for in 1457 the ruler of Scotland felt that golf was replacing the national sport of archery, and in the same year Parliament legislated against both golf and football.

Parliament again legislated against the golf in 1471 and in 1491, specifying a more exacting penalty on players as well as on promoters of the game. King James IV of Scotland was persuaded to try the game and it intrigued him so that he became an enthusiast.

The St. Andrews Golf Club of Scotland was founded in 1552. This club is generally accepted as the birthplace

of golf and it is still in operation.

The first British Open, and the first golf tournament in history was held in 1860 and was won by Willie Park, Sr.

Golf was first introduced into this country in 1867 by John G. Reid, a Scotchman who lived in New York. Having previously played the game in Scotland, Mr. Reid sent to Europe for some equipment and laid out a six-hole course near his home. As a result of his efforts, the game was first played in this country on November 4 of that year and he is now known as the Father of American Golf. Interest in golf continued to grow and in 1894 twenty-some golf clubs got together and held two tournaments, the medal-play and the match-play.

On December 22, 1894, the United States Golf Association was organized, starting with but five clubs. This organization has since been the ruling body of amateurs.

Vardon was considered the best golfer the world ever knew until Bobby Jones, Jr., at the age of 29, established an enviable record, one that may never be equalled. He won the Junior Championship of the Atlanta Athletic Club when but nine years old and then went on to conquer the golfing world. In 1930 he won what has been called "The Grand Slam" in golf, winning the Open and Amateur Championships of both Great Britain and the United States.

The evolution of the ball has been an interesting one. Originally, golf balls were made by hand and consisted of feathers wadded into a leather covering. This type of ball was supplanted by the solid gutta percha ball which was used until about 1895. At that time rubber bands were wound around a solid rubber center and today we have the scientifically machined ball that can be driven 350 - 360 yards instead of only 260 - 270 yards.

While many professional and amateur golfers still prefer the hickory shafts, contending they have more whip, the sporting goods manufacturers are perfecting steel shafts which are giving excellent results in distance, accuracy, and lasting qualities. Special patented necks allow more whip and less shock.

Instead of the more cumbersome wooden heads, we find neatly and scientifically shaped streamlined ones rapidly coming into use. Many of them are especially grooved so as not to drag through the turf on a ball that is struck a little low. Some manufacturers are making composition heads that may prove satisfactory. New type and better balanced irons are also being produced. Courses are also being improved and made attractive.

As a result of these changes, literally thousands and thousands of golfers, in many different lands, are playing and enjoying this fascinating game of golf.

Skills and Techniques

To play a good game of golf one must be in the proper mental state: He must not have the attitude that the game demands only power. The player who has a relaxed, rhythmic swing will fare much better than the one who is determined to put all his strength into the shot in order to get distance. Couple relaxation with the following skills and one will fare well as a golfer.

Teeing the Ball - Golfers differ as to how high to tee the ball. Some experts tee the ball high so that it may be hit on a very slight upswing thus giving the ball an overspin and more distance on the roll. In general the ball should be placed at a medium height so that it may be squarely met at the middle of the swing. When hitting into a wind, tee the ball slightly lower than usual.

Grip - An easy way to obtain a fairly accurate alignment on the objective and a correct grip on the club is to take a position that will enable you to hit in the desired direction, the left foot being about even with the ball, the left arm hanging naturally at the side of the body, and the club handle resting lightly in the curved fingers of the left hand. Address the ball with the immediate center of the club head, turn the left hand inward on top of the club handle so that at least three knuckles of the left hand may be seen. Reach across in front of the body with the right hand and take a light but fairly firm and natural grip on the shaft underneath the left hand. The left thumb may be down the side of the shaft or around the shaft. The grip may be the interlocking type, in which the little finger of the right hand is locked between the first and second fingers of the left; or it may be the overlapping type in which the little finger of the right hand is merely placed on top of and between the first and second fingers of the left.

Stance - The stance should be comfortable. The feet should be approximately the width of one's shoulders apart. Certain individuals, depending upon statures, like a wide stance, others a narrow one, some a square

stance, some an open stance, and still others a closed stance. By practice determine the stance most suitable to you and then continue to use it. Good balance can be obtained by relaxing the knees and distributing the weight evenly on the feet.

Addressing the Ball - The ball should be addressed by aligning the contour of the club head with the desired direction. The arms should be held close to the body and the club extended outward at an acute angle. Moving the club head back and forth immediately over the ball is called a waggle and tends to aid in the alignment of the proposed shot and the relaxation of the wrist, arms, and body.

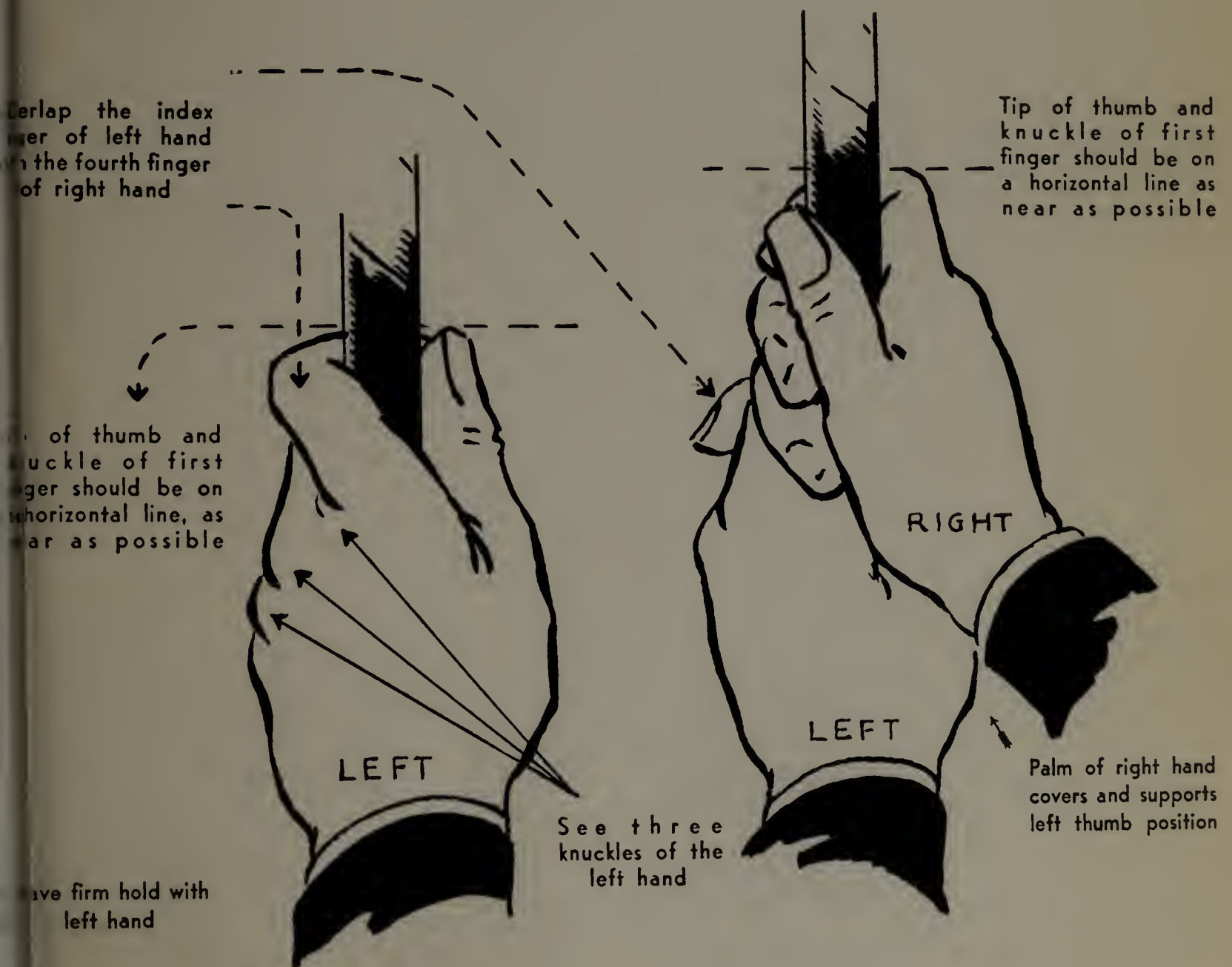
The Swing - After executing the waggle one should again place the head of the club at the ball and, while keeping the left arm straight and the right elbow close to the body, start turning the shoulders which will allow one to drag the club, with the left hand, back away from the ball. The back swing should be fairly slow and should extend back and around as a natural swing and body turn will permit. The forward swing should start slowly with the club head falling naturally at first and the momentum increased as the club is pulled down with the left hand, the right hand going in smoothly just before the moment of contact. Keeping the right elbow close to the body, and hitting from the inside out will assist in the all-important follow-through and body balance at the end of the swing. At the time of contact with the ball, the left arm, left hand, and shaft should be in line with a point immediately back of the ball.

The Pivot - The proper grip, stance, address, waggle, drag, back swing, forward swing, and follow through should result in a correct body movement, or pivot. As one executes the back swing, the shoulders should not sway forward, backward, or sideward, but turn in their own sphere. At the beginning of the swing the weight is equally distributed on both feet but most of it is transferred to the right leg as you bend the left knee inward toward the right knee in executing the back swing. The left foot is also rolled inward at the instep and as a result the heel is raised slightly with the body turn. Just preceding and almost simultaneous with the forward swing, the weight is transferred from the right to left foot, where it remains as the pivot is finished and the stroke completed.

Putting - The stance should be an easy, comfortable one for the individual concerned, thus permitting the necessary relaxation essential to good putting. It is thought by many that a rather erect body gives one a better perspective of the desired direction and necessary distance of the putt. One should not hurry his shots. Confidence also plays a big part in putting. One should strive to make the shot mechanical, practicing putting as often as possible.

GROUP GOLF INSTRUCTION

SET NO. 1 SUPPLIED BY PROFESSIONAL GOLFERS ASSN. OF AMERICA



GROUP GOLF INSTRUCTION

SHEET NO. 2 SUPPLIED BY PROFESSIONAL GOLFERS ASSN. OF AMERICA

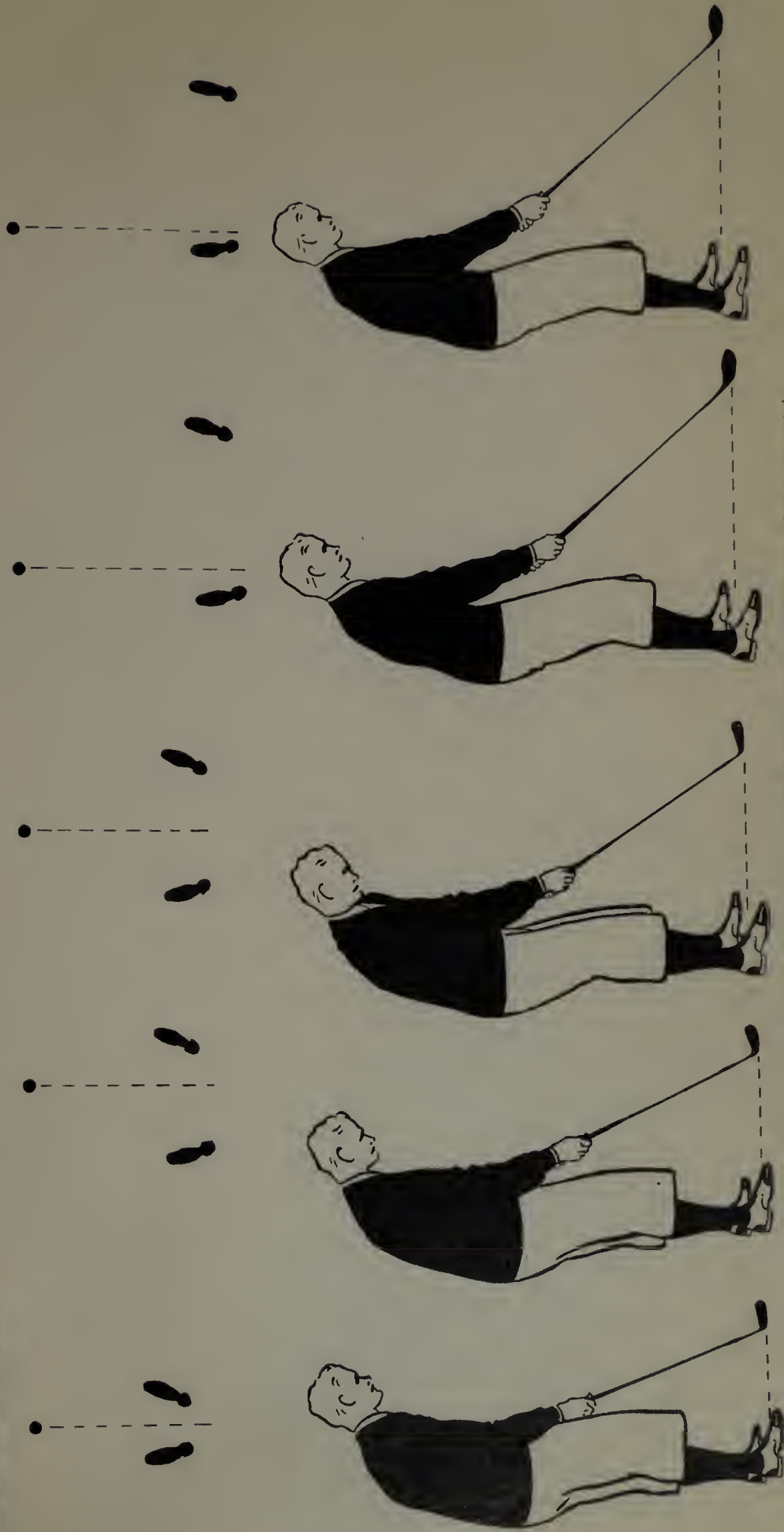
No. 1. Stance for Chip Shot. A low running shot, played with either a chipper or a number 4 iron from edge or immediate vicinity of green

No. 2. A Pitch Shot, played with a number 5, 6, 7 or 8 iron

No. 3. Long Iron Shot, showing position for full swing with a number 2, 3, or 4 iron

No. 4. Stance for Bressie and Spoon. Ball in position a little back of left heel

No. 5. The Drive. Ball placed on a tee, on a line opposite heel of left foot



Settle weight well back on heels in the address of all shots. This is essential in maintaining the balance of the body during the pivot back and forth.

No. 1. Address. Right side is relaxed. Shaft is in line with left arm. Settle weight well back on heels. No tension in shoulders, elbows, or wrists

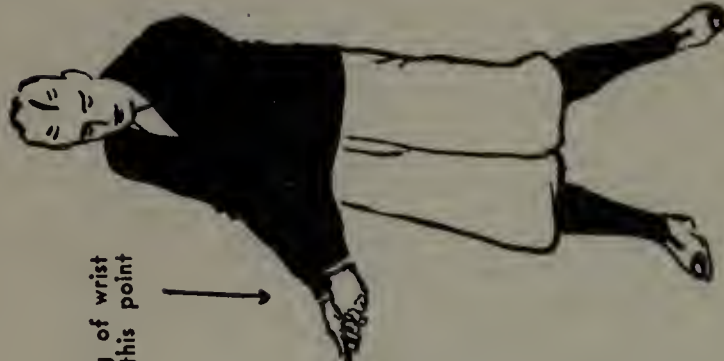
No. 2. The backswing originates in the left side, turning easily toward the right at the same time as club leaves the ball. Left knee bends inward toward right. Right leg straightens to support the weight. Left arm fully extended

No. 3. Top of Swing. Club in horizontal position and pointing directly at hole. Firm grip with left hand, especially little finger. Back of both hands under shaft. Left arm firm

No. 4. Downswing starts with left heel re-turning to ground as weight is shifted to left leg. Shoulders start turning back toward the left as hands and arms begin downward sweep. The left arm firm and fully extended has full command of swing



Cocking of wrist starts at this point



Notice body turn. Back facing hole



Wrists still cocked

Left heel back on the ground

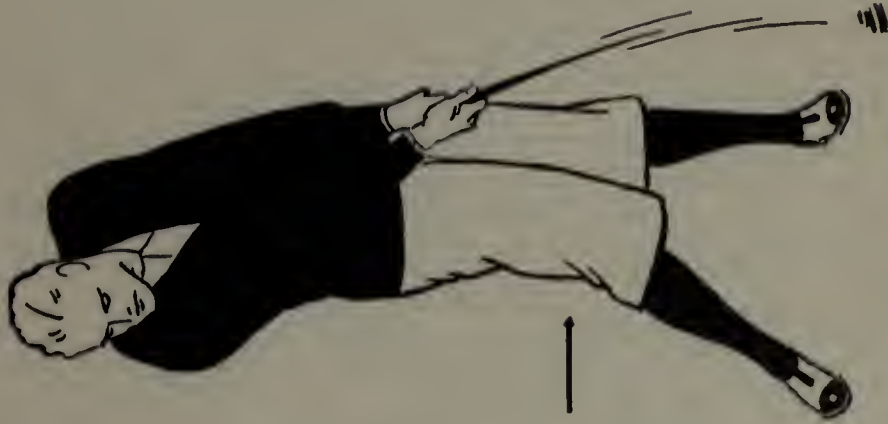
No body sway in any of these movements

Right shoulder slipping under as the club is brought to the ball. Left arm is extended straight, but not tense. Right elbow is kept comfortably close to the side



Left leg is straightening. Wrists begin to "uncock"

Head has not moved forward with swing. Left hand and arm still held firm. Hands still held in position of address, with back of left hand facing the hole. Right leg relaxes and follows around easily



Swing near its finish. Force of swing turns over the right hand as swing impetus carries the club and hands around the body. Head is still in the same position as address



Finish of swing. Allow weight to follow around with the swing. Have an easy, firm balance. If the player pivots properly in swinging the club back, then swings down and through with the hands, body weight will be distributed properly



Equipment

In golf the only essential equipment, outside of the playing implements, is good comfortable shoes and clothing.

Clubs: The American golfer, always ready to try any device that he believes can lower his score often buys golf equipment which is useless and frequently unnecessary. A well made set of golf clubs costs anywhere from \$35 to \$60. They should last a lifetime.

Balls: Standard balls may be purchased for about \$.50 apiece.

Bag: Any leather or canvas bag will do. They can be purchased for as low as \$5.

Set: A set of 4 clubs, combination driver and brassie, a midiron, a mashie, and a putter can be bought for about \$16.

Condensed Rules

In golf the following rules are fundamental and essential to the beginner.

1. A hole is won by the side which holes its ball in fewer strokes than the opposing side, and a hole is halved if both sides hole out in the same number of strokes.
2. A match consists of eighteen holes and is won by the side which is leading by a number of holes greater than the number of holes remaining to be played.
3. A match begins by each side playing a ball from the first teeing ground in the order of the draw. The side which wins a hole shall take the honor at the next hole.
4. A ball may be re-teed without any penalty.
5. The ball must be fairly strack with the head of the club and must not be pushed, scraped, or spooned.
6. A ball must be played from wherever it lies or the hole be given up.
7. The ball farthest from the hole must be played first.
8. A ball in play may not be touched except as provided for in the rules.
9. The player may without penalty touch his ball with his club, provided he does not move the ball.
10. Irregularities of surface cannot be removed by the player.
11. A moving ball cannot be played until it stops.
12. If a player when making a stroke, hits the ball twice, he shall count the stroke and a penalty stroke in addition.
13. If the balls are within a club's length of each other, one may be lifted until the other has been played.

14. If a ball strikes the player or his caddy, he shall lose the hole.
15. If a ball strikes the opponent or his caddy, the player shall win the hole.
16. If a player plays an opponent's ball, he shall lose the hole unless the opponent also plays his ball. Then he only loses a stroke.
17. If a ball is lost, a penalty stroke is taken and a new ball played from the spot nearest where you think it is lost.
18. A player may stand out of bounds to play a ball in bounds.
19. If a ball is unfit to continue using, it may be changed.
20. A player may strike his ball while it is moving in water.
21. The line of putt must not be touched except in addressing the ball.
22. No one shall shield the ball from the wind while the player is putting.
23. A player is entitled to send his own caddy to stand at the hole while he plays his stroke.
24. When a player's ball lies on the putting green, he shall not play until the opponent's ball is at rest.

If more complete information is desired, it can be obtained by writing:

The Secretary
The U. S. Golf Association
73 East 57th Street
New York, N. Y.

Terminology

Addressing the Ball -- Placing the body and club in position to hit the ball.

Ace -- Hole in one.

Approach Shot -- The shot that is intended to put the ball on the green.

Away -- Ball farthest from the hole and to be played first.

Birdie -- Making a hole in one less than par.

Bisque -- Handicap set but stroke to be taken on any hole as designated by the recipient.

Bogey -- A phantom's score against which players may compete -- usually one over par for each hole.

Brassie -- Wooden club No. 2, so called because of usual brass base.

Bunker -- Hazard, usually artificial.

Caddie -- Assistant to the players -- watches the ball, carries bag and clubs.

Carry -- Distance the ball travels through the air.

Club -- Implement used to propel the ball.

Course -- Ground within the limits.

Cup -- Hole into which the ball is played.

Dead -- Ball does not roll after hitting.

Divot -- Slice of turf cut out with iron clubs.

Dodo -- Three under par on any hole.

Dormie -- As many holes up as there are remaining and one cannot be beaten.

Down -- Number of strokes or holes one is behind an opponent.

Driver -- Wooden club No. 1.

Eagle -- Two under par for any hole.

Face -- Lofted part of club heads.

Fairway -- Area between a tee and the green where the grass is cut short.

Flag -- Flag indicating position and number of hole, the staff being inserted in the center of the cup.

Fore -- Warning to those ahead when a ball is travelling toward them.

Foursome -- Two players on a side.

Green -- Putting green around the hole.

Grip -- Part of a club that is gripped; also method of grasping.

Halved -- Tied score on a hole or complete game.

Handicap -- Number of strokes conceded by a stronger to a weaker player.

Hazard -- Natural or artificial obstacles other than the ordinary grass of the course.

Head -- Striking portion of club.

Heel -- Part of head nearest shaft.

Hole -- Cup into which the ball is played.

Hole-out -- Final stroke for a hole.

Honor -- Right to play first from a tee.

Hook -- A shot that curves to the left.

Iron -- Club with iron head.

Lie -- Position of ball on course.

Links -- The entire course.

Loft -- Height or elevation of ball; also angle of club head.

Match -- A game.

Match play -- Competition based on holes won and lost.

Medal play -- Competition based on total strokes per round.

Neck -- Angle between shaft and head of club.

Par -- Perfect score for a hole.

Pivot -- Body turn.

Press -- Effort to hit ball unusually hard.

Putt -- Stroking ball with putter toward hole.

Rough -- Rough ground and long grass on either side of fairway.

Round -- A match, usually 18 holes.

Shaft -- Handle of a club.

Slice -- Hitting across the ball so that the ball curves to the right.

Stance -- Position of feet.

Stroke -- Act of hitting ball.

Stymie -- When one ball lies on the green directly in line of another and the balls are more than 6 inches apart.

Tee -- Elevation - sand, wood, ivory, etc. - upon which ball is placed for drive.

Toe -- Front portion of club head.

Top -- Hitting the ball above its center.

Trap -- Hole with bed of sand, which forms a hazard.

Up -- The number of holes or strokes one is ahead of opponent.

Waggle -- Preliminary movements with the club as you address the ball.

Wood -- Club with a wooden head.

TENNIS

TENNIS

History

Since the Renaissance the earliest reference to anything resembling our modern game of tennis has come from France and Italy. In Italy the game took the name of "giuoca della palla," while in France it became known as "Jeu de paume." This game was played indoors, but shortly afterward it became an outdoor sport under the name of "la longue paume," and was popular not only with the upper classes but also with the masses.

The French outdoor game was played with a cork ball which was originally struck by the hand, with or without a glove, over a bank of earth two feet in height which served the same purpose as our modern net. Soon a crude racket was substituted, consisting of a wooden frame and handle with gut strings. It was in this form that the game was introduced into England in the Middle Ages.

Major Walter C. Wingate of the British Army is credited with the invention of lawn tennis as we know it. He patented the game in 1874 and called it "sphairistike." The court was smaller than the one now used and the rules were slightly different.

In March, 1875, the first organized laws for the game were formulated by the Marylebone Cricket Club. The club's committee selected the name of "lawn tennis" and formed a new set of rules. The racket system of scoring was used.

In 1877 the first tournament was held at Wimbledon, England, and was called the All-England Championships; this was the first of a series of tournaments which ever since have been acknowledged as representing the championship of England, and sometimes of the world.

The tournament was very successful but before another took place, another revision of rules was made. The present scoring plan was adopted and the size of the court and height of the net were modified.

In 1888 the English Lawn Tennis Association was formed as a national organization to govern the sport. The authority of this body was recognized in all countries except American, which made its own rules.

In America Wingate's "sphairistike" made its first appearance in 1874, brought here by a traveler who had seen the game played in England. A number of courts were built and numerous clubs started to play the game, the first being the Staten Island Cricket and Baseball Club near New York and the American Cricket Club of Philadelphia.

During the first few years of tennis in the United States, it was played under varying conditions as to size of court and height of net. So in May, 1881, a meeting was held and the present United States Lawn Tennis Association was formed. It adopted practically all the rules and all the dimensions as to height of net and length and width of court as laid down by the English Lawn Tennis Associa-

tion. It was also decided to hold the annual championship tournament at Newport.

A number of new strokes were developed by American players. The most noteworthy of these were the "Lawford strokes" invented by A. C. Lawford and consisting of a "terrific forehand drive," and the volley which was invented and used extensively by the Renshaw Brothers.

The game has become so popular here in America that today the total number of tennis players in the United States is estimated at about four millions.

Skills and Techniques

In tennis, although there are many skills and techniques, the main thing to remember is to be constantly alert and relaxed, ready to go at any time in any direction. The following skills should, however, be mastered.

The Service - The position one should assume prior to serving is with the body sidewise to the net, left shoulder forward, and feet a comfortable distance apart. The hips and shoulders should be parallel with the side-lines of the court, facing the right side of the court. A firm stance should be assumed, with the left foot pointing to the front, back of the baseline, but at the commencement of the stroke the weight of the body should be principally on the right foot and should remain there up to the moment the ball is struck.

The Service Grip: There are four grips most commonly used by tennis players which are as follows: the Western grip, the Eastern grip, the Continental grip, and the Composite grip. Each one can be used for service.

1. The Western Grip: Place the racket flat on the ground, put the right hand on the handle as if to grasp it, curl the fingers around the handle without shifting the racket, then raise the racket with the left hand and allow the fingers of the right hand to close round the handle. This grip is sometimes called the "Cannon Ball Service."
2. The Eastern Grip: Hold the racket blade perpendicular, in the left hand, introduce the fingers of the right hand around the handle so the knuckle of the index finger is to the right of the handle and the thumb around the left side meeting the fingers. This grip permits lots of spin on the ball.
3. The Continental Grip: By holding the racket as for the Eastern grip, place the knuckle of the index finger on top of the handle and grip as before. This grip gives a different angle to the ball on impact.
4. The Composite Grip: This grip is used by many

players who have very little resiliency in the wrist and who feel more comfortable with a grip midway between the Continental and the Eastern.

The Toss of the Ball: The ball is tossed by a wrist motion rather than an arm motion. It is best to toss the ball as high that the player has to reach for it, which position gives a better angle from which to clear the net and keep the service in bounds. Spin on the ball is introduced by the action of the wrist, each person having a slightly different movement and different rhythm.

The Service Stroke: The stroke is virtually commenced from behind the right shoulder. As the racket comes down it is directed so that the ball is struck in the middle of the racket and driven straight forward. At the same time the body is swung around, bringing the right hip and shoulder to the front position, carrying the arm and racket with them. When the racket strikes the ball it follows through - the racket clings to the ball as long as possible, controlling its flight and directing its course. The swinging of the body transfers the weight to the left foot, and imparts the major portion of force required for the stroke, reducing to a minimum the exertion of the arm itself. The player should strive to cultivate a style. The arm should be bent at the beginning of the stroke, but straighten out as it meets the ball. The racket must be held firmly but not with a hard and tiring grip. The server should use his full height and rise on his toes to hit the ball. Always keep the eye on the ball.

The American Twist Service: The American twist service sends the ball forward with an exaggerated diagonal spin so that the ball, after taking the course of an "out drop" in baseball, breaks as it hits the ground instead of following the original course of flight, and bounces with the spin on it. The bounce is high and remains in the air longer, giving the server an opportunity to come up to the net. The grip for this is the Eastern grip.

The Various Strokes - In tennis there are various strokes used. The following should be mastered.

The Forehand Stroke: The forehand stroke is generally made on the run, the body leaning forward. Starting with the weight of the body

on the left foot, draw the racket back and out, the head of the racket in line with the shoulder, fingers down as the right foot comes to the ground. Swing the racket round to meet the ball, keeping the elbow slightly bent as the left foot goes forward to the ground. Continue your follow through as far as possible in the intended direction of the ball as the right foot touches the ground. At the finish of the stroke the player should be facing the net. Keep your eye on the ball until you connect with it. When the ball is hit, it should be at waist height; if it is too low, bend your knees but do not bend from the waist. If too high, slip back a little. Let your weight come through as though you intended to go into the net. Move the flat face of the racket on the ball with a firm wrist, moving forearm, shoulder, and body all together, thus bringing into the stroke the big muscles and body weight.

The Backhand Stroke: The handle of the racket is gripped with the back of the hand uppermost. You stand with your side toward the net and your body out of the way. You bring your racket arm to the left side and look over your right shoulder. The weight of the body is on the balls of the feet, but it is transferred to the left foot as you make a graceful swing backward with the racket. As it comes forward to meet the ball, transfer the weight of the body to the right foot, at the same time taking care to straighten out the left arm in line with the shoulder to keep your balance. When the forward stroke begins, the wrist does the first work, starting the racket and bringing the head into line to meet the ball. The elbow follows, pulling the racket still faster on its way, and finally straightens out for contact. At the moment of impact the racket has developed a great deal of speed. As the racket passes over the ball, it gives it a top spin which causes it to drop quickly when it is past the net.

The Lob: The lob is a high, arched ball hit squarely at right angles, with an underhand swing of the racket. Your grip should be as firm as for the fastest drive you have, the same as for the forehand drive, but instead of following through and over with the racket, the

ball is lifted with an upward follow through. Care should be taken not to shorten the action, and there should not be too much spin on the ball. To lob well requires plenty of practice.

The Overhead Smash: The overhead smash is the stroke that the player executes at the net to return a lob. The smash is a reproduction of the service. The ball must be hit hard, and it must be placed so that your opponent cannot return it. Once started it should never be checked, for if it is it will be ruined. You must be directly under the ball, body bent forward slightly, head a little in front. Follow the ball closely with the eyes. Footwork must be rapid and correct. Timing must be perfect and you must have a perfect control of body balance, using the service grip, and the side-ways position of the body with the left shoulder to the net, while jumping high at the same time to get more height and more force to your smash.

The Chop: In making the chop stroke the racket is held about head high, the arm rigid and bent at the elbow. The racket is brought down and stopped abruptly. It makes contact with the ball at an angle of about 85 degrees; the angle imparts spin to the ball toward the racket. It is simply a chopping movement with no follow through. The chop can be used either forehand or backhand.

The Volley: The volley is a stroke made by hitting the ball before it has touched the ground. Volleys are a form of attack and not a defensive stroke. The grip is similar to that of the forehand stroke except that the head of the racket must not fall below the wrist. The wrist is held firm. Draw the racket back slightly before hitting the ball and meet it firmly. Step into it rather than waiting for it to come. The weight of the body should be well forward on the balls of the feet. Never be caught flat-footed. As in the forehand and backhand strokes, the body should be turned with the side toward the net to allow a full swing of the arm.

The Net Attack - It is not everyone who can make a successful net player, size and stature playing an important part. Never go to the net except on deep

forcing shots. Never go to the net if you are fatigued. Never go to the net when the ball is in the neighborhood of your opponent's service line. Learn to go to the net at the right time and for the right shots.

Doubles - The important things to remember in doubles are (1) always work together as a team, (2) when one goes to the net the other cover the backcourt, (3) talk to each other so that you know what the other fellow is going to do.

Illustrated Tennis Techniques



Western

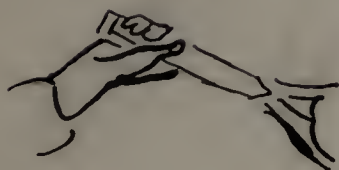


The Grips

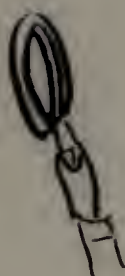


Eastern

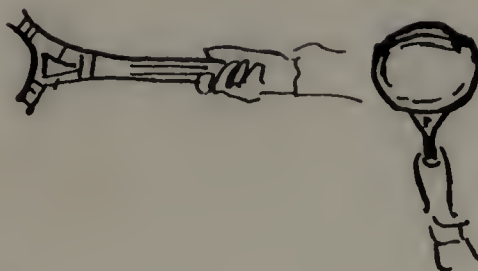
(1) Forehand (2) Backhand (3) Forehand (4) Backhand



Continental



The Grips



Composite

(5) Forehand (6) Backhand (7) Forehand (8) Backhand

Equipment

Although all kinds and types of tennis equipment can be purchased, the following is all that is essential.

Racquets: It is usually more satisfactory to buy a good racquet and take care of it by keeping it in a press and a cover, than to buy a cheap one which will not last with the best of treatment. Sometimes in spring sporting goods stores sell their stock of fall racquets off cheaply, and good bargains can often be obtained. Cost from \$5 to \$17.

Balls: Each year the United States Lawn Tennis Association approves the balls of about a dozen manufacturers. These are all equally good, although one year some makes are more popular than others. Do not use inferior balls under any consideration. Balls usually cost \$4 a dozen, or about \$1.25 for three.

Nets: Always buy a double-court net. For match play, nets should be tarred and made of 48-thread twine.

Markers: Markers are made for use with dry lime or a wet wash. For individuals the former is easiest to use and generally more satisfactory.

Condensed Rules

The following rules are the more important of the Official Rules.

The Singles Game:

1. The players shall stand on opposite sides of the net; the player who first delivers the ball shall be called the server, and the other the receiver.
2. The choice of sides and the right to be the server or receiver in the first game shall be decided by toss.
3. The Server shall throughout the delivery of the service - not change his position by walking or running, maintain contact with the ground, keep both feet behind the base line.
4. After a fault (if it be a first fault) the server shall serve again from behind the same half of the court from which he served that fault.
5. A fault may not be claimed after the next service has been delivered.
6. The Server shall not serve until the Receiver is ready.
7. The service is Let (a) if the ball served touches the net and is otherwise good, (b) if the service is delivered when the Receiver is not ready.
8. At the end of the first game the Receiver shall become server and the Server Receiver. They all alternate every game.
9. A ball is in play from the moment at which it is delivered in service, and remains in play till the point is decided.
10. A player loses the point if:
 - a) He fails, before the ball in play has hit the ground twice consecutively, to return it directly over the net.

- b) He return the ball so that it hits the ground out-of-bounds.
 - c) He volley the ball and fail to make a good return.
 - d) He touch the ball in play more than once in making a stroke.
 - e) Any part of him or his personnel touch the net.
 - f) He volley the ball before it has passed the net.
 - g) The ball in play touch him or any of his personnel other than his racquet.
 - h) He throw his racket at and hit the ball.
11. A ball falling on the line is regarded as falling into the court.
12. If a player wins his first point, the score is called 15 for that player; on winning his second point, the score is 30; on winning his third point, the score is 40; and on winning his fourth point, he has game. If both players have won three points, the score is called Deuce; and the next point is advantage, then game. In other words, after a deuce a player must win two points in a row to win the game.
13. The player who first wins six games wins a set unless he is not ahead by two games. Then he must play until he is.

The Doubles Game:

The singles rules apply to the Doubles Game with the following exceptions.

- 1. For the doubles game the wide courts are used.
- 2. Any partner may serve first, provided his side wins the toss.
- 3. The order of serving and receiving cannot be altered during a set, but may be at the beginning of the next set.

4. It is a fault if the ball touch a partner on its course of flight.
5. The ball shall be struck alternately by each side, either partner doing the honours.

Terminology

Ace -- An earned point; as distinguished from one scored by opponent's error.

Ace on Serving -- Point earned on serving a ball that cannot be returned.

Advantage -- Score of a game after either side has won a point from "deuce."

Alley -- Strip of court between side-lines for singles or doubles.

Backhand -- With playing arm and racquet across the body.

Backspin -- Spinning of the ball caused by a straight "cut" or a "chop" stroke, the ball spinning back toward the striker.

Blocked Ball -- One returned without swing of the racquet.

Baseline Game -- Style of play in which a player stays near the baseline.

Chop Stroke -- A slicing stroke made by drawing the racquet down sharply with a chopping motion when striking the ball, giving it a sharp back twist.

Cross Court -- A stroke driving the ball diagonally across the court.

Cut Stroke -- A stroke in which the racquet strikes a glancing blow, and is drawn sharply to one side.

Deuce -- A term used when both players have the same score; i.e., 40-40.

Game -- A stage in the play when one player reaches a total beyond 40 and is two or more points ahead of his opponent.

Half Volley -- Stroke made by hitting the ball just as it rises after its first bound from the ground.

Let -- A term used when the ball hits the net on the service and falls into the service area. It is then played over again without penalty.

Lift Stroke -- One made so that it apparently lifts the ball over the net.

Line Pass -- A stroke made from the side of the court so as to drive the ball past the player at the net, the ball passing along parallel with and inside the side-line.

Match -- Usually two out of three sets win the match. In the finals of tournament play, the arrangement is usually three out of five sets to win.

Pass -- A stroke that drives the ball past an opponent at the net, inside the court but beyond his reach.

Reverse Twist -- A stroke made by drawing the racquet across the body in striking the ball.

Renshaw Smash -- Severe overhead volley intended to kill the ball by its speed.

Set -- A scoring term applying to the player who first wins six games, provided he is two games in advance of the opponent.

Short Ball -- A ball dropped just over the net when the opponent is back in his court.

Side Pass -- Stroke that drives the ball along the side of the court out of reach of the opponent at the net.

Smash -- A fast overhead volley of a dropping ball intended to kill the ball by speed.

Spin -- A twist of the ball when it is cut in making the stroke.

Stop Volley -- A volleyed stroke made from close to the net by simply stopping the ball with the racquet causing it to rebound of its own force over the net (a short ball play).

Stroke -- The act of striking the ball with the racquet while in play; specifically a fast stroke made with the racquet drawn sharply upwards so that the ball twists forward and drops after crossing the net. Also a point or series of plays that score a point.

Underhand -- With the racquet below the level of the shoulders.

Volley -- Stroke made by hitting the ball before it has touched the ground.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Agutter, George Lessons in Tennis. American Sports Publishing Company. 1935.
- Annual Year Book of United States Golf Association. United States Golf Association. New York.
- Bachrach, W. and Hugh, C. A. Outline of Swimming. J. P. Bradwell Publishing Co. Chicago. 1934.
- Badminton Guide. Official Canadian Guide. American Sports Publishing Company. New York.
- Barbour, R. H. Touch Football. D. Appleton Company. New York. 1933.
- Brown, Dr. John, Jr. Simplified Volley Ball. Spaulding's Athletic Library. New York. 1933.
- Budge, Donald T. Budge on Tennis. Prentice-Hall Inc. New York. 1939.
- Burchard, John The Rise of Badminton. A. G. Spaulding & Co. New York.
- California By-Products Co. Handbook on Archery. California By-Products Co. San Francisco, California.
- Clausser, W. V. B. Canoeing. Boy Scouts of America. New York. 1931.
- Craft, Dave and Cio The Teaching of Archery. A. S. Barnes and Company. New York. 1936.
- Encyclopaedia Britannica.
- Forrest, James A Natural Golfer. E. P. Dutton and Company. New York. 1939.
- Goss, G. E. Swimming Analyzed. A. S. Barnes and Company. New York. 1935.
- Gulduhl, Ralph Groove Your Golf. International Sports Inc. Indianapolis, Ind.
- Jackson, Carl H. Better Badminton. A. S. Barnes and Company. New York. 1939.
- Neumeyer, Martin H. Leisure and Recreation. A. S. Barnes and Company. New York. 1936.

- Mitchell, E. D. Sports for Recreation. A. S. Barnes and Company. New York. 1936.
- Nixon and Cogens An Introduction to Physical Education. W. B. Saunders Company. Philadelphia and London. 1938.
- Noren, Arthur T. Softball. A. S. Barnes and Company. New York. 1940.
- Official Softball Guide. American Sports Publishing Company. New York. 1940.
- Official Volley Ball Rules. American Publishing Company. New York.
- Pfeifer, Friedl Lun Valley Ski Book. A. S. Barnes and Company. New York. 1939.
- Prager, Walter Skiing. A. S. Barnes and Company. New York. 1935.
- Pulsen, Ornulf Skiing. Macmillan Company. New York. 1924.
- Rice, Grantland Golf Guide. American Sports Publishing Company. New York.
- Riskey, E. Know Your Canoe. Intramural Sports Building, Ann Arbor, Michigan.
- Rounsevelle, Phillip Archery Simplified. A. S. Barnes and Company. New York. 1931.
- Rybizka, Benno The Barnes Schneider Ski Technique. Harcourt Brace and Company. 1938.
- Sheffield, L. M. Swimming Simplified. A. S. Barnes and Company. New York. 1927.
- Thomas, Lowell and Shane Soft-ball - So What? Frederick Stokes and Company. New York. 1939.
- Tunis, John R. Sport for the Fun of It. A. S. Barnes and Company. New York. 1940.
- Wardlaw, Charles Fundamentals of Baseball. Charles Scribner's Sons. New York. 1925.
- Weyand, A. M. American Football; Its History and Development. D. Appleton and Company. New York. 1926.
- Volley Ball Guide. A. S. Barnes and Company. New York. 1940.

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S. H. Kaufman
W. V. Welles

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